PATENT
5863-00203

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No. 10/772,071
Confirmation No. 1712

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2/20/2007 /Pamela Gerik/
Date Pamela Gerik

DECLARATION OF CHARLES HUSTON UNDER 37 C.F.R. § 1.132 REGARDING FILE HISTORY U.S. PAT. NO. 5,627,549

I, Charles D. Huston, hereby declare and state that:

1. I am the attorney of record in the captioned case.

2. Exhibit A attached hereto is a copy of the file history of U.S. Pat. No. 5,627,549 obtained from Specialized Patent.

3. The parent Serial No. 08/282,893 was filed July 29, 1994. A continuation was filed January 16, 1996 and begins at page 78 in the attached Exhibit A. A Preliminary Amendment was filed January 16, 1996 and begins at page 82 in Exhibit A.

4. The Office Action of Oct. 25, 2006 in paragraph 4 cites claims 1-2 of Dimitiradis et al as providing support for "providing time and location sensitive advertising information to a user, wherein the position, as disclosed in the specification, is derived from GPS."

5. While the specification of U.S. Pat. No. 5,627,549 (Park) may be relevant to the examination of the captioned application, it appears the subject matter cited in paragraph 4 of the Office Action of Oct. 25, 2006 is new matter and not prior art to the captioned application.

6. I declare that all statements made herein of my own knowledge are true, and that all statements of my own belief are believed to be true, and further that these statements were made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under the United States Code, Title 18 § 1001, and that such willful false statements may jeopardize the validity of the patent, and any reexamination certificate issuing thereon.

Feb. 20, 2007	/Charles D. Huston/
Date	Charles D. Huston

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Chad Huston, Esquire
DAFFER McDANIEL, LLP

US Prosecution File History: 5,627,549 (Including 08/282,893)

Your Reference: 5863-00203

[redacted]

342 - 357

ISSUE CLASSIFICATION	Class	Subclass
	342	357

UTILITY SERIAL NUMBER 08/585,604 | PATENT DATE MAY 06 1997 | PATENT NUMBER 5627549

5627549

SERIAL NUMBER	FILING DATE	CLASS	SUBCLASS	GROUP ART UNIT
08/585,604	01/16/96	342	357	2202

Blum

APPLICANTS

~~MICHAEL~~ C PARK, PORTLAND, OR. TMB

MICHAEL

CONTINUING DATA********

VERIFIED TMB

THIS APPLN IS A CON OF 08/282,893 07/29/94 now abandoned

DK

3/12/97

FOREIGN/PCT APPLICATIONS********

VERIFIED TMB none.

FOREIGN FILING LICENSE GRANTED 02/06/96

Foreign priority claimed 35 USC 119 conditions met — Verified and Acknowledged (Examiner's Initials)	AS FILED	STATE OR COUNTRY	SHEETS DRWGS.	TOTAL CLAIMS	INDEP. CLAIMS	FILING FEE RECEIVED	ATTORNEY'S DOCKET NO.
☐ yes ☑ no / ☐ yes ☑ no — TMB	→	OR	7	14	3	$750.00	P126-FWC

ADDRESS

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TITLE

DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

U.S. DEPT. OF COMM./ PAT. & TM—PTO-436L (Rev.1

11-29-96
Applications Examiner

PARTS OF APPLICATION FILED SEPARATELY

NOTICE OF ALLOWANCE MAILED

11-28-96

Assistant Examiner

CLAIMS ALLOWED

Total Claims	Print Claim
2	1

ISSUE FEE C.P.

Amount Due	Date Paid
$240	4-17-97

Theodore M. Blum
THEODORE M. BLUM
EXAMINER
GROUP ART UNIT 222
Primary Examiner

DRAWING

Sheets Drwg.	Figs. Drwg.	Print Fig.
6	7	2

ISSUE BATCH NUMBER G92

PREPARED FOR ISSUE

Label Area

Form PTO-436A
(Rev. 8/92)

ISSUE FEE IN FILE EC

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08/282893

ISSUE CLASSIFICATION | Class | Subclass

UTILITY SERIAL NUMBER	PATENT DATE	PATENT NUMBER
08/282893		

SERIAL NUMBER	FILING DATE	CLASS	SUBCLASS	GROUP ART UNIT	EXAMINER
08/282,893	07/29/94	342	357	2202	BLUM

APPLICANTS

MICHAEL C. PARK, PORTLAND, OR.

CONTINUING DATA********
VERIFIED

FOREIGN/PCT APPLICATIONS********
VERIFIED

FOREIGN FILING LICENSE GRANTED 08/25/94

Foreign priority claimed / 35 USC 119 conditions met	AS FILED	STATE OR COUNTRY	SHEETS DRWGS.	TOTAL CLAIMS	INDEP. CLAIMS	FILING FEE RECEIVED	ATTORNEY'S DOCKET NO.
☐ yes ☐ no / ☐ yes ☐ no Verified and Acknowledged Examiner's Initials	→	OR	7	14	3	$710.00	P126

ADDRESS

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~~BUILDING 140~~
BEAVERTON OR 97006

TITLE

DUAL CHANNEL ADVERTISING REFERENCE VEHICLE LOCATION

U.S. DEPT. of COMM.-Pat. & TM Office — PTO-436L (rev. 10-78)

PARTS OF APPLICATION FILED SEPARATELY	Applications Examiner
NOTICE OF ALLOWANCE MAILED	Assistant Examiner
	CLAIMS ALLOWED: Total Claims / Print Claim
ISSUE FEE: Amount Due / Date Paid	DRAWING: Sheets Drwg. / Figs. Drwg. / Print Fig.
Label Area	Primary Examiner
	ISSUE BATCH NUMBER
	PREPARED FOR ISSUE

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(Rev. 8/92)

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INITIALS _____

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CONTENTS

Date Entered or Counted			Date Received or Mailed
	1.	Application _____ papers.	
	2.	Change of Address	9-29-94
3/17	3.	Rejection (3 mos)	3/21/95
	4.	Interview Summary	7/6/95
	5.	Amdt A	6-19-95 6-15-95
7/18	6.	Final Rej. 3 mos	7-18-95
	7.	Certified Copy (Moot)	7-31-95
	8.	Req. Ext. Time	11-17-95 Date
	9.	Notice of Appeal	11-17-95
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08/585604

PATENT APPLICATION

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CONTENTS

Date Entered or Counted			Date Received or Mailed
	1.	Application 7 Pats. papers.	
	10	Ltr B	1/16/96
	11	Ltr C	1/16/96
6/19	12	Reject 3 mths	6/12/96
	13	Req. Ext. Time	11-8-96 Grtd 2 mo.
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11/24	15	P.T.O.L-37	11-26-96
	16	P.T.O.L-85	11-26-96
2-4-97	9.	Formal Drawings 6 sht(s) rec'd 1	12-20-96
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INDEX OF CLAIMS

Claim Final	Claim Original	Date							
		3/16/95	7/17/95						
	1	✓	✓						
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SYMBOLS

- ✓ ..... Rejected
- = ... Allowed
- - (Through numberal) Canceled
- + ... Restricted
- N ..... Non-elected
- I ..... Interference
- A ..... Appeal
- O ..... Objected

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342	357	3-15-95	TM3
364	449		
340	996		
UPDATED		7-17-95	TM3

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.

SEARCH NOTES

	Date	Exmr.

(RIGHT OUTSIDE)

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* U.S. GOVERNMENT PRINTING OFFICE: 1992-327-409

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APPLICATION SERIAL NUMBER
09/595604

APPLICANT'S NAME (PLEASE PRINT)
MICHAEL C. PARK

IF REISSUE, ORIGINAL PATENT NUMBER

INTERNATIONAL CLASSIFICATION

H	04	B		7	185
G	01	S		5	02

ORIGINAL CLASSIFICATION

CLASS	SUBCLASS
342	357

CROSS REFERENCE(S)

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)
364	449.1
340	996

GROUP ART UNIT: 2202

ASSISTANT EXAMINER (PLEASE STAMP OR PRINT FULL NAME)

PRIMARY EXAMINER (PLEASE STAMP OR PRINT FULL NAME)
THEODORE M. BLUM
EXAMINER

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

PTO 270
(REV. 5-91)

ISSUE CLASSIFICATION SLIP

GROUP ART UNIT 222

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POSITION		ID NO.	DATE
CLASSIFIER			
EXAMINER		258	2/5
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INDEX OF CLAIMS

Claim Final	Claim Original	Date							
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SYMBOLS

✓ ..... Rejected
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INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
342 364 340	357 449 996	11-25-96	TMB

SEARCH NOTES

	Date	Exmr.

(RIGHT OUTSIDE)

PATENT APPLICATION SERIAL NO. 08/282893

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

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PTO-1556
(5/87)

DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

Background of the Invention

The present invention relates generally to vehicle information systems, and particularly to vehicle information systems providing information relevant to current vehicle location.

A variety of traffic related information is now available for use in aiding vehicle travel, especially in urban road networks. A travel information device likely to be soon more commonly incorporated into vehicles is a vehicle position detecting system, e.g., the well known global positioning system (GPS) providing satellite broadcast to determine location of a receiving GPS device. Vehicles with GPS capability, therefore, have the very useful feature of tracking current vehicle position.

Given access to current vehicle location, i.e., longitude and latitude values, a proposed information system provides vehicle position relative to a map representation of a given region, e.g., a map display of city streets with vehicle position indicated by street location rather than longitude and latitude position. Thus, a digital map database further supports vehicle

position display by reference to more meaningful information, i.e., by reference to a street map. To be of value, however, the digital map database must be current and comprehensive, i.e., have information relevant to wherever a vehicle may be used.

Massive digital map databases are, however, inherently expensive and difficult to include in mass produced products such as is desirable in a GPS-capable consumer product. Digital map databases require license fees, large amounts of memory, frequent and expensive revision, and generally cannot be comprehensive enough to allow use throughout the entire world. It is not economically feasible to provide in an inexpensive consumer product a digital map database covering the entire world, or at least a significant geographic region. If the device is prepared for use throughout the world, an incredibly massive digital map is required giving rise to significant cost and maintenance requirements. If only selected geographic regions are incorporated into the digital map, the device cannot be used outside such geographic regions without post-manufacture modification or manipulation of numerous storage devices, e.g., a library of CD-ROM discs.

It would be desirable, therefore, for a vehicle information device to be usable in any geographic area as manufactured yet still maintain an ability to indicate vehicle position information beyond merely longitude and latitude. In particular,

people need more meaningful information than merely longitude and latitude, yet a massive digital map is difficult to justify in the context of relatively inexpensive consumer products. The need for current vehicle position is most typically a need to know current vehicle position relative to a location of interest. Unfortunately, customizing massive digital databases to provide reference to individual vehicle operator locations of interest is impractical. It would be desirable to avoid a requirement of procuring and maintaining in the travel information device a massive digital database, yet maintain an ability to reference geographic locations. The subject matter of the present invention provides such a vehicle travel information device.

Summary of the Invention

In accordance with the present invention, a travel information device in a vehicle includes a vehicle position detecting device and collects vehicle position information while also collecting data relevant geographic points of interest to provide a display indicating position of a point of interest relative to a current vehicle location.

In the illustrated and preferred form of the present invention, collecting information relevant to geographic points of interest is by radio signal data broadcast in conjunction with radio signal voice broadcast, such as advertising, whereby a user

interrogates a device under the present invention to collect by data broadcast detailed information concerning an advertisement of interest provided by a companion voice broadcast. The data broadcast includes precise location information providing, in conjunction with current vehicle position, a basis for presenting a display graphically showing relative position between the geographic point of interest, such as the location of an advertiser, and the current vehicle location.

According to one aspect of the present invention, storage of information relative to geographic points of interest builds for the user a personal electronic reference for later selectively displaying such information, including ability to selectively display a representation of location relative to a then current vehicle position.

The subject matter of the present invention is particularly pointed out and distinctly claimed in the concluding portion of this specification. However, both the organization and method of operation of the invention, together with further advantages and objects thereof, may be best understood by reference to the following description taken with the accompanying drawings wherein like reference characters refer to like elements.

Brief Description of the Drawings

For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings in which:

FIG. 1 illustrates a vehicle information system, a given road network, and a vehicle travelling within the road network and carrying a travel information device according to a preferred form of the present invention.

FIG. 2 is a block diagram of the travel information device for the vehicle of FIG. 1.

FIG. 3 illustrates the front panel controls and display of the travel information device of FIG. 2 as viewed by the operator of the vehicle of FIG. 1.

FIG. 4 illustrates by flow chart a first method of collecting data for storage by the travel information device wherein the user hears by voice broadcast information of interest an selects corresponding data broadcast information for storage.

FIG. 5 illustrates by flow chart an alternative method for collecting information from the data broadcast whereby the operator designates collection criteria and the travel information device automatically collects qualifying data broadcast information.

FIG. 6 illustrates by flow chart programming for a radio broadcast system coordinating or associating voice radio broadcast with data radio broadcast.

FIG. 7 illustrates by flow chart programming of the travel information device of FIG. 1 for scanning or reviewing of information stored therein.

Detailed Description of a Preferred Embodiment

In FIG. 1, a vehicle 10 travels within a road network 12. Network 12 includes main arterial roadways as illustrated, but as may be appreciated would be significantly more complex. For the present illustration, it will be understood that vehicle 10 travels throughout road network 12 along any selected travel route. Furthermore, the operator of vehicle 10 travels within road network 12 to and from geographic points of interest 14, individually designated 14a-14d. While only several such geographic points of interest 14 are indicated in FIG. 1, it will be understood that any number of such geographic points of interest 14 may exist within road network 12. Furthermore, geographic points of interest 14 for one individual vary relative to that of another individual. Accordingly, reference herein to geographic points of interest 14 shall be taken to be locations of interest to a particular person.

Also illustrated in FIG. 1, radio broadcast system 20 provides a combined radio signal voice broadcast 22 and radio signal data broadcast 26. While illustrated as a single radio broadcast system 20, it will be understood that voice broadcast 22 and data broadcast 26 could originate from separate radio signal broadcast facilities. Under the preferred form of the present invention, however, voice broadcast 22 and data broadcast 26 originate from a common FM radio source as provided under the "Gaskill" paging system. The present invention may be implemented according to many paging system protocols, but as illustrated herein operates under the time-division multiplexed protocol of the Gaskill paging system, as illustrated in U.S. Patent Nos. 4,713,808 and 4,897,835. The disclosure of U.S. Patent Nos. 4,713,808 and 4, 897,835 are incorporated herein fully by reference thereto.

The Gaskill paging system and associated receiving devices provide an inexpensive, highly battery-efficient and highly miniaturized paging device which, under the illustrated embodiment of the present invention, constitutes a data radio signal receiver 62 (FIG. 2) as a conduit for data broadcast 26 delivery to device 40.

Generally the Gaskill paging system uses FM radio signal transmission facilities to broadcast within a side-band frequency paging signal data packets according to a time-division

multiplexed protocol. Thus, voice broadcast 22 comprises the normal FM radio signal broadcast and data broadcast 26 represents the side-band paging system broadcast.

It will be understood, therefore, that radio broadcast system 20 provides coordinated voice and data by radio signal. In particular, radio broadcast system 20 receives voice advertisement and data message information 28, e.g., an advertising subscription, and integrates the data message portion thereof into other incoming paging system data packets originating from a Gaskill paging system clearinghouse 30. In this manner, radio station 20a coordinates or associates voice and data broadcasts 22 and 26, respectively. As may be appreciated, however, the data message portion of information 28 could be routed through clearinghouse 30, in which case radio station 20a associates a voice broadcast 22 with a data broadcast 26 originating entirely from clearinghouse 30. Such association may be provided by a number of arrangements, but under the illustrated form of the present invention, association of voice broadcast 22 and data broadcast 26 shall be by time relation, e.g., concurrently broadcast, broadcast in close time relationship, or at given time offset.

Vehicle 10 includes a travel information device 40 receiving by way of antenna 42 the voice broadcast 22 and data broadcast

26. Thus, device 40 receives conventional FM voice broadcasts and paging data broadcasts the Gaskill paging system protocol. In this manner, device 40 receives associated voice and data broadcasts whereby an operator of vehicle 10, upon hearing a voice broadcast of interest, captures the associated data broadcast to collect and store within device 40 detailed information, i.e., a data record including longitude and latitude, for a geographic point of interest 14.

FIG. 1 also illustrates a global position system (GPS) satellite 50 providing transmission 52. Details and use of GPS transmission and the collection of such transmission to determine location of a GPS receiver are well known. Use of GPS transmission 52 under the present invention is by incorporation of a global position system receiving device into travel information device 40 collection of a current vehicle position therewith as described more fully hereafter.

Thus, travel information device 40 receives several channels of information. First, voice broadcast 22 provided by radio broadcast system 20 provides to the vehicle operator a stream of voice information potentially including reference to geographic points of interest 14, i.e., advertisers located within road network 12. Second, data broadcast 26, as provided in association with voice broadcast 22, provides further detailed text message information captured selectively by device 40, e.g.,

when commanded by the operator of vehicle 10. This establishes, among other detailed information, a precise location for a geographic point of interest 14. Third, the global position system transmission 52 provides a current vehicle location and, therefore, a basis for presenting location of geographic points of interest 14 relative to current vehicle position.

As described more fully hereafter, device 40 maintains a database containing a collection of data records obtained from data broadcast 26. Each data record corresponds to a geographic point of interest 14, and device 40 displays a vector, i.e., distance and direction, indicator illustrating the relative position of a given geographic point of interest 14 relative to current vehicle location. In this manner, device 40 constructs and maintains information specific to a user of device 40, i.e., maintains information relative to geographic points of interest 14 selected by the operator of vehicle 10, and further provides meaningful position information beyond longitude and latitude for such points of interest 14 without reference to a massive digital map database of the road network 12. Device 40 maintains current information relative to a given geographic region and specific to selected geographic points of interest 14. Under one aspect of the present invention, such geographic points of interest 14 correspond generally to locations of advertisers providing, by way of radio broadcast system 20, both voice information in broadcast 22 and detailed message or text data in broadcast 26.

This allows listeners to later reference such data and locate the corresponding geographic point of interest 14 relative to a then current vehicle position.

FIG. 2 illustrates in block diagram travel information device 40. In FIG. 2, a microprocessor 60 orchestrates generally operation of device 40. Data radio signal receiver 62 couples antenna 42 to microprocessor 60. As contemplated under the preferred form of the present invention, data radio signal receiver 62 comprises essentially a paging system receiver operating under the Gaskill paging system. Thus, the Gaskill system paging device provided as receiver 62 serves as a data terminal collecting data broadcast 26 and providing to microprocessor 60 detailed information associated with, for example, an associated voice advertisement broadcast in voice broadcast 22. A voice radio receiver 64, also coupled to antenna 42, receives the voice broadcast 22 and delivers a voice signal 66 to an amplifier 68 driving a speaker 70. Microprocessor 60 tunes voice radio receiver 64 by way of a tune control 72. Thus, microprocessor 60 selects a radio signal voice broadcast 22 by tune control 72 and, by way of volume control 74 applied to amplifier 68, causes presentation of the corresponding voice broadcast on speaker 70.

A global position system receiver 80 receives the transmission 52 from global position system satellite 50 and

delivers to microprocessor 60 a current vehicle location 82. In this manner, microprocessor 60 requests from global position system radio receiver 80 a current vehicle location and receives in return the current vehicle location 82.

Microprocessor 60 receives other vehicle information. For example, a fuel gauge sensor 90 provides a fuel remaining input 92 to microprocessor 60.

Microprocessor 60 drives a display 100. Display 100 presents, for example, tuning and station selection information relative to the voice radio receiver 60 to provide an FM radio capability wherein the operator of vehicle 10 manipulates input controls 102, i.e., volume, station select, and other controls described more fully hereafter, to listen to a selected voice broadcast 22. Display 100 further presents, as described more fully hereafter, data relevant to stored geographic points of interest 14 and also graphic indication, i.e., a vector indicating distance and direction, of a selected geographic point of interest 14 relative to the current vehicle location.

A compass 104 provides a vehicle orientation input 106 to microprocessor 60. Device 40 uses the current vehicle position, i.e., as provided by vehicle location 82, and also the current vehicle orientation, as provided by input 106, to calculate a graphic indication, i.e., a display vector orientation,

indicating direction of travel for a geographic point of interest 14 relative to the current vehicle position. To portray on display 100 the relative direction, i.e., toward the geographic point of interest, current vehicle orientation is considered. Thus, calculation and display of a vector on display 100 begins with calculation of distance between two points designated by longitude and latitude values, i.e., distance between the current vehicle location and the geographic point of interest 14, and calculation of an angle of orientation for a direction of travel. In other words, display 100 has a fixed relationship relative to vehicle 10 and vehicle orientation input 106 supports an accurate display of a direction of travel as presented by vector icon on display 100. Furthermore, the display presented may be updated as vehicle 10 moves and the distance between vehicle 10 and the geographic point of interest 14 changes and also as vehicle orientation changes.

FIG. 3 illustrates a front view of the travel information device 40 monitoring the combined voice and data broadcasts 22 and 26 and global positioning system broadcast 52. FIG. 3 also illustrates display 100 and input controls 102. Input controls 102 include a tune dial 102a, a volume dial 102b and an AM/FM switch 102c. As may be appreciated, device 40 operates, from a user perspective, in part as a conventional car radio. The user manipulates input controls 102a-102c to listen to a voice broadcast 22 on speakers 70. Additional control

inputs 102 for device 40 include a clock button 102d, a tuner button 102e, a where information button 102f, a stored information button 102g, a filter button 102h, and a here button 102i. Use of input controls 102d-102i will be explained more fully hereafter, but generally provide to the user various display presentations relative to display 100 and modes of operation for device 40.

As illustrated in FIG. 3, display 100 presents a text message display portion 100a showing information such as vendor name, address, and current marketing information, for example, a sale or promotional activity including a date of availability for the promotional activity. Display portion 100a further presents a category of vendor, e.g., sporting goods. As may be appreciated, the data records obtained from data broadcast 26 and stored in device 40 include a variety of fields as indicated generally by the display portion 100a in FIG. 3. In such form, information maintained in device 40 may be manipulated in the manner of a database, e.g., searching, sorting, and other such database record management functions.

Display 100 further provides a vector angle portion 100b and a vector distance-to-travel portion 100c. As described herein above, angle portion 100b indicates the relative orientation of a direction of travel from the current vehicle location to a selected geographic point of interest 14. Distance-to-travel

portion 100c represents the distance separating the current vehicle location and the geographic point of interest. The angular orientation of portion 100b desirable takes into account the current vehicle 10 orientation input 106 as provided by compass 104. Presentation of vector angle portion 100b should, therefore, indicate generally a direction of travel considering the viewer's perspective, i.e., looking at display 100 from within vehicle 10, to indicate appropriately the relative orientation of a direct line-of-sight or direction-of-travel from the current vehicle position to the geographic point of interest 14.

Clock button 102d, when pressed, causes presentation by microprocessor 60 on display 100 the current time of day. Tuner button 102e, when pressed, causes presentation on display 100 by microprocessor 60 information relevant to tuning voice broadcast radio 64, e.g., frequency of station currently tuned, preset features available, and any other information normally displayed in connection with operation of a voice broadcast radio.

Where information button 102f, when pressed, indicates to microprocessor 60 operator desire to collect information from data broadcast 26. For example, voice broadcast 22 and data broadcast 26 are synchronized broadcasts and the operator of device 40 hears an advertisement of interest provided by way of voice broadcast 22 and presses the where information button 102f

for further information. Microprocessor 60 then collects a data record, i.e., text message information relative to the advertisement of interest, by way of data broadcast 26 and data receiver 62. Text message information presented in display portion 100a is obtained, therefore, by the operator activating the where information button 102f during or just after a voice broadcast advertisement of interest.

Device 40 holds multiple data records, i.e., one for each geographic point of interest 14. Stored information button 102g allows scanning through such stored data records and selective display of the previously stored data record for a geographic point of interest 14. In this manner, the user of device 40 constructs a personal electronic reference tracking travel information including data records for particular geographic points of interest 14, i.e., data records selected by and of interest to a particular user. The user thereby builds a personalized and current database of geographic points of interest 14.

Filter button 102h drives device 40 into an automatic data collection mode according to user selected filter criteria. For example, device 40 monitors the stream of data provided in data broadcast 22 and compares location information therein to the current vehicle location to collect all references within a given distance of current vehicle location. Additionally, the user

establishes a category of interest, e.g., auto parts advertisements, grocery store advertisements, sporting goods or restaurant advertisements, to further filter information available in data broadcast 22. In this manner, the user of device 40 creates automatically a customized database by designating geographic points of interest 14 according to user-selected criteria.

The here button 102i provides another method of creating a data record concerning a geographic point of interest 14 within device 40, in this case one corresponding to current vehicle location. The operator presses here button 102i and creates a geographic point of interest 14 data record corresponding to current vehicle location. This allows the user to begin at a given location, operate here button 102i, and have ability to reference that given location later while travelling, e.g., to return to that given location or to have directional indication of that given location from another vehicle location. The data record created by device 40 in response to the here button 102i includes at least the longitude and latitude information corresponding to the vehicle position at the time of button 102i activation. Additional textual information can be entered by the user if desired, e.g., textual information entered by operation of control inputs 102 in response to supporting prompts presented on display 100. For example, the user may wish to name a location in conjunction with activating the here button 102i for

meaningful later reference thereto.

FIG. 4 illustrates programming of microprocessor 60 for information collection from data broadcast 26, i.e., in this case in response to activation of where information button 102f. In FIG. 4, it will be assumed that voice broadcast 22 and data broadcast 26 are associated by simultaneous broadcast. As may be appreciated, other association methods may be employed and incorporated into the illustrated embodiment of the present invention. Processing in response to user activation of the where information button 102f begins in block 140 where microprocessor 60 collects the most recently received data record of data broadcast 26. As shown in the present embodiment, voice broadcast 22 and data broadcast 26 are associated by simultaneous presentation and microprocessor 60 need only collect in response to activation of the where information button 102f the current presented or most recently presented data record in data broadcast 26. In anticipation of such task, microprocessor 60 always collects in an input buffer (not shown) each data record presented in data broadcast 26. For each new data record presented, the old, previous data record is replaced in the input buffer. Thus, when the operator activates where information button 102f, the input buffer holds, or will soon hold, a complete data record taken from data broadcast 26 and associated with the current voice broadcast 22 presentation. Thus, processing in block 140 implements a method of association

between voice broadcast 22 and data broadcast 26.

Decision block 142 determines whether the current voice broadcast 22 is related to the most recently received data record. For example, not every voice broadcast 22 presentation, e.g., advertisement, will have an associated data record available in data broadcast 26. For example, if the data record most recently received by way of data broadcast 26 is "stale" then it should not be taken as related to the current voice broadcast 22 presentation. In such case, processing branches through block 144 where device 40 presents on display 100 the message "where information not available" and processing terminates. If, however, the data record most recently received is related to the voice broadcast 22 presentation, i.e., not "stale", then processing advances to block 146 where microprocessor 60 obtains the current vehicle location and vehicle orientation. As may be appreciated, determining whether a given data record is "stale" may be implemented by time-stamping data records held in the input buffer. The length of time required to become "stale" in the input buffer is variable and a function of how quickly the operator of vehicle 10 must activate the where information button 102f.

Microprocessor 60 then calculates in block 148 the angle portion 100b and distance-to-travel portion 100c. In other words, microprocessor 60 calculates and angle of orientation for

the arrow icon presented in portion 100b using the current vehicle orientation 106 and the direction of travel toward the subject geographic point of interest 14. Microprocessor 60 then calculates the distance-to-travel value for portion 100c as the separation between the current vehicle position and subject geographic point of interest 14.

As may be appreciated, a timer interrupt may also be set to itteratively execute procedures updating the display portions 100b and 100c as the vehicle changes orientation and location relative to the geographic point of interest 14 associated with the current data record. Furthermore, microprocessor 60 may take into account fuel remaining input 92 in comparison to expected vehicle 10 mileage and consider separation between current vehicle position and the subject geographic point of interest 14. If vehicle 10 holds insufficient fuel to make the trip to the subject geographic point of interest, an appropriate display may be presented to indicate such condition to the vehicle operator.

Continuing to block 150, microprocessor 60 presents in display portion 100a the text message portion of the current data record, e.g., vendor name, address, phone number, and any other special promotional information provided. In decision block 152, the operator has opportunity to keep for permanent storage the current data record, in which case processing branches through block 154 where the current data record is stored for later

reference, i.e., by operation of the stored information button 102g. Otherwise, processing exits directly from decision block 152.

FIG. 5 illustrates by flow chart an alternative method for gathering information from the data broadcast 22, i.e., gathering information automatically according to user-designated criteria in response to filter button 102h. In this manner, the operator need not monitor voice broadcast 22 to collect information of potential interest by way of data broadcast 26.

In FIG. 5, processing begins in block 180 where microprocessor 60 obtains, from the user, appropriate filtering criteria. For example, user interaction is conducted by way of display 100 and alternate functions defined for control inputs 102 to collect from the user a designation of filter criteria. For example, the user may be interested in all data records broadcast and being associated with a location within a given distance of current vehicle location. In this manner, the user collects advertising information for vendors in close and convenient proximity to current vehicle location. Also, data records are classified according to category, and the user designates as qualifying under user criteria certain categories of information. For example, the user may be interested in certain types of products or services advertised and having associated data records in data broadcast 22. In any event,

block 180 represents user designation of criteria applied to data records appearing in data broadcast 22, i.e., which of those data records will be accepted and stored by device 40 for later reference by operation of the stored information button 102g.

Continuing to block 182, microprocessor 60 gets the next data record provided in data broadcast 22 and, in decision block 184, applies the user-designated criteria. If the data record collected in block 182 meets the user-designated criteria provided in block 180, then processing advances to block 186. Otherwise, processing returns to block 182 from decision block 184 to collect the next data record appearing in data broadcast 26. In block 186, microprocessor 60 obtains the current vehicle position and orientation. Continuing to block 188, microprocessor 60 calculates and displays the arrow icon at appropriate angle of orientation and the distance-to-travel value in display portions 100b and 100c, respectively.

Then, in block 190, microprocessor 60 displays the text message data available in the collected data record. An alarm presented in block 190 indicates to the user collection of a data record potentially of interest, i.e., satisfying the user-designated criteria provided in block 180. Decision block 192 allows the user opportunity to discard or keep for permanent storage the data record just collected. Accordingly, if the user declines storage of the just-collected data record then

processing returns immediately to block 182. Otherwise, processing advances through block 194 where the just-collected data record is stored for later reference by operation of the stored information button 102g. Processing then returns from block 194 to block 182 for collection of a next data record.

As may be appreciated, an exit procedure (not shown) interrupts the data record collection loop represented by flow chart in FIG. 5. For example, the user may wish to terminate collection or may wish to modify the designation of data record collection criteria in block 180. Furthermore, processing at decision block 192 need not forego collection of additional data records in data broadcast 26. In other words, additional records may be queued for review by the operator even though microprocessor 60 is awaiting input at decision block 192. Also, should the operator not respond immediately at decision block 192, a time-out feature allows processing to advance without requiring user input, e.g., accepts for storage the data record qualifying under the user designated criteria and allows the user to later delete the record from device 40.

FIG. 6 illustrates by flow chart processing conducted by the radio broadcast system 20 in providing associated voice broadcast 22 and data broadcast 26. In FIG. 6, processing begins in block 200 where radio broadcast system 20 receives an advertising subscription including both voice advertising for presentation in

the voice broadcast 22 and message information for presentation in the data broadcast 26. As noted herein above, association between the voice advertisement and message data is by simultaneous broadcast. Thus, system 20 transmits in block 202 the text message information and location information in data broadcast 26 followed by transmission of the voice presentation in voice broadcast 22. As may be appreciated, processing in blocks 202 and 204 repeats intermittently, i.e., according to how often and when the dual channel advertisement is to be broadcast.

FIG. 7 illustrates programming for microprocessor 60 in response to activation of the stored information button 102g. In FIG. 7, processing begins in block 220 where microprocessor 60 presents opportunity for the user to scan stored data records according to a given criteria, i.e., get a display selection from the user of device 40. For example, the user wishes to display data records according to a certain sequence or to display only records meeting a certain criteria, e.g., restaurant advertisements. Having obtained a display selection from the user, processing advances to block 224 where microprocessor 60 gets a next data record according to the user-designated display selection. Continuing to block 226, microprocessor 60 obtains the current vehicle position and orientation. Then, in block 228, microprocessor 60 calculates and presents display portions 100b and 100c, i.e., displays vector information indicating the distance and relative orientation to a geographic point of

interest 14 corresponding to the data record currently presented. Continuing to block 230, microprocessor 60 displays at display portion 100a the text portion of the data record for review by the user. Decision block 232 provides the user opportunity to terminate scanning of stored information in which case processing exits from decision block 232. If the user continues scanning through the scored data records according to the designated display selection, then processing returns from decision block 232 to block 224 where a next data record in the sequence is selected for review by the user.

Important to note, as the user scans through stored data records and obtains a presentation on display 100, the then-current vehicle orientation and location are referenced to present a then-current relative position in display portions 100b and 100c, i.e., the current relative direction of travel and distance to the geographic point of interest 14 associated with the data record currently displayed by device 40. Also, processing illustrated in FIG. 7 initiates a timer interrupt procedure updating display portions 100b and 100c as the vehicle orientation and location relative to the currently displayed geographic point of interest 14 changes.

The scanning procedure illustrated in FIG. 7 may, as will be appreciated, be augmented to include additional features such as deleting data records, sorting on various fields of the text

message portion, and applying additional category values whereby the user may better manage a collection of information maintained in device 40 and relevant to travel of vehicle 10 to and from geographic points of interest 14.

Thus, an improved vehicle information device and method of operation have been shown and described. Under the present invention, a user builds a customized database containing geographic points of interest, including precise longitude and latitude information and ability to provide distance and orientation of travel toward the geographic point of interest and in relation to the current vehicle location. In this manner, the user obtains useful information by way of radio signal without requiring reference to a massive digital database of the surrounding geographic area. Information obtained by radio signal is always current, i.e., replaced by subsequent broadcast. In this manner, the operator maintains a dynamic and up-to-date database of specific geographic points of interest.

It will be appreciated, that the present invention is not restricted to the particular embodiment or embodiments that have been described and illustrated herein, and that variations may be made therein without departing from the scope of the invention as found in the appended claims and equivalents thereof.

Claims

What is claimed is:

1. A method for providing travel information relative to vehicle location, the method comprising the steps:

transmitting information of potential interest, said information of potential interest including records, each record including at least a location corresponding to a geographic point;

receiving at travel information devices said information of potential interest;

determining at each travel information device a current location therefor; and

selecting at each travel information device ones of said records for display, said display including indication of direction and distance to the corresponding geographic point in relation to said current location for said travel information device.

2. A method according to claim 1 wherein said transmitting step includes, in said information of potential interest, also text message data.

3. A method according to claim 2 wherein said text message

data comprises advertising data for a vendor at the corresponding geographic location.

4. A method according to claim 1 wherein said method further comprises the step of carrying said travel information device in a vehicle.

5. A method according to claim 1 wherein said step of transmitting includes transmitting voice information by voice broadcast and text data information by data broadcast, said records being provided in said data broadcast, said voice broadcast and data broadcast being associated whereby presentation of said voice broadcast corresponds to a given portion of said data broadcast.

6. A method according to claim 1 wherein said step of transmitting information comprises the step of transmitting advertising information and said geographic point corresponds to a vendor location associated with said advertising.

7. A method of operating a travel information device carried by a vehicle along a travel route, the method comprising the steps:

receiving data records by radio signal, each data record corresponding to a potential point of interest along a travel route and including at least a geographic location for said

potential point of interest;

selecting and storing ones of said data records;

calculating current location for said travel information device; and

displaying position relative to said current location of a geographic location corresponding to a selected data record.

8. A method according to claim 7 wherein said data records correspond to advertising information of a vendor at said geographic location.

9. A method according to claim 7 wherein said method further comprises advertising broadcast by voice signal and associated with at least one of said data records.

10. A method according to claim 7 wherein said displaying position step comprises the step of displaying relative orientation of a direction and magnitude of distance from said current location to said geographic location.

11. A method of providing travel information at a vehicle, the method comprising the steps:

detecting said vehicle position;

collecting information relevant to geographic points of interest, said information including a geographic location for each of said geographic points of interest; and

displaying relative to a current location as established in said detecting step a distance to and a direction toward a selected one of said geographic points of interest.

12. A method according to claim 11 wherein said method further comprises the steps:

maintaining a plurality of data records, each corresponding to information taken from said collecting step and relevant to a geographic point of interest; and

reviewing said plurality of data records while concurrently executing said display step relative to a data record currently under review taking into account a then-current vehicle location.

13. A method according to claim 11 wherein said collecting step comprises the steps:

monitoring by an operator of the travel information device a voice broadcast; and

actuating by an operator said travel information device to capture information in an associated data broadcast.

14. A method according to claim 11 wherein said step of detecting said vehicle position is by satellite transmission.

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DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

Abstract of the Disclosure

A vehicle information device and collects information concerning specific geographic points of interest. The operator recalls for display such information, including a display showing direction and distance of travel to a designated geographic point of interest relative to a then-current vehicle location. Dual channel advertising is transmitted by voice broadcast and by data broadcast. Upon hearing in the voice broadcast an advertisement of interest, the operator captures the associated data broadcast including, among other detailed text message information, the location of the advertiser. Distance and relative direction of travel from the current vehicle location to the geographic point of interest is thereby presented. Multiple geographic points of interest are stored for selective review whereby the user constructs a database containing locations of particular interest to a particular person.

POWER OF ATTORNEY

Commissioner of Patents and Trademarks
Washington, D. C. 20231
Sir:

Seiko Telecommunications Systems Inc. is the assignee of the patent application filed herewith and identified as.

Title: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION
Inventor: Michael C. Park
Docket: P126

Seiko Telecommunication Systems Inc. as assignee hereby appoints the following attorney to prosecute this application and to transact all business connected therewith in the U. S. Patent and Trademark Office.

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Elmer W. Galbi	19,761
Keith Cushing	32,407

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Beaverton, OR 97006

Direct telephone calls to: Elmer W. Galbi 503-531-1516

Date 6/27/94

T. Yamada

Takehide Yamada
Vice President
Seiko Telecommunication Systems Inc.

J&S 93

DECLARATION BY INVENTOR

As the below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe that I am an original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention,

Entitled: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

Docket Number: P-126

the specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above identified specifications, including the claims.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations 1.56(a).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made, with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

CLAIM OF PRIORITY BASED ON FOREIGN APPLICATIONS: **NONE**

CLAIM OF PRIORITY BASED ON PREVIOUSLY FILED U.S. APPLICATIONS: **NONE**

Michael C. Park	USA	Michael C Park	7/29/94
Inventor name	Citizenship	Signature	Date

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Portland, Oregon 97225
Post Office Address and Residence

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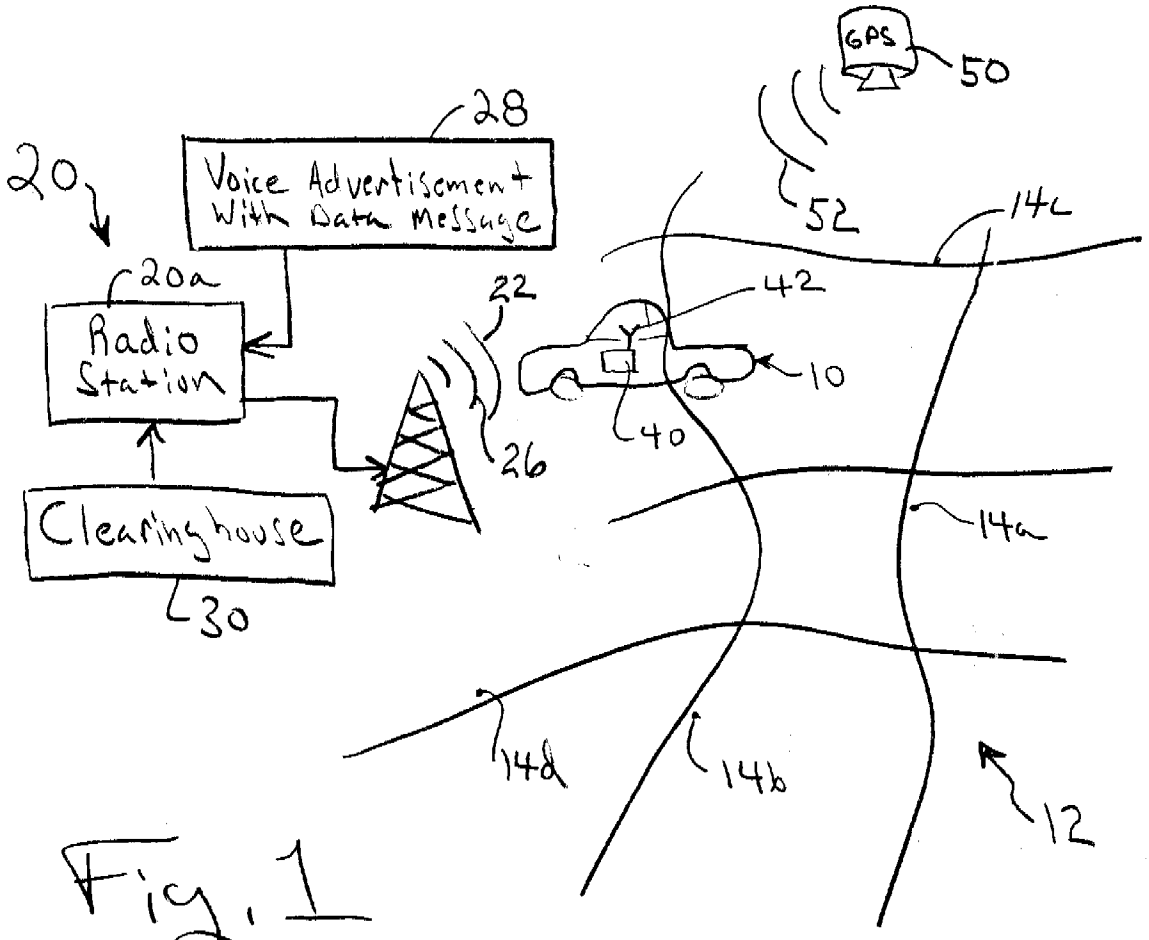

Fig. 1

7 Figs

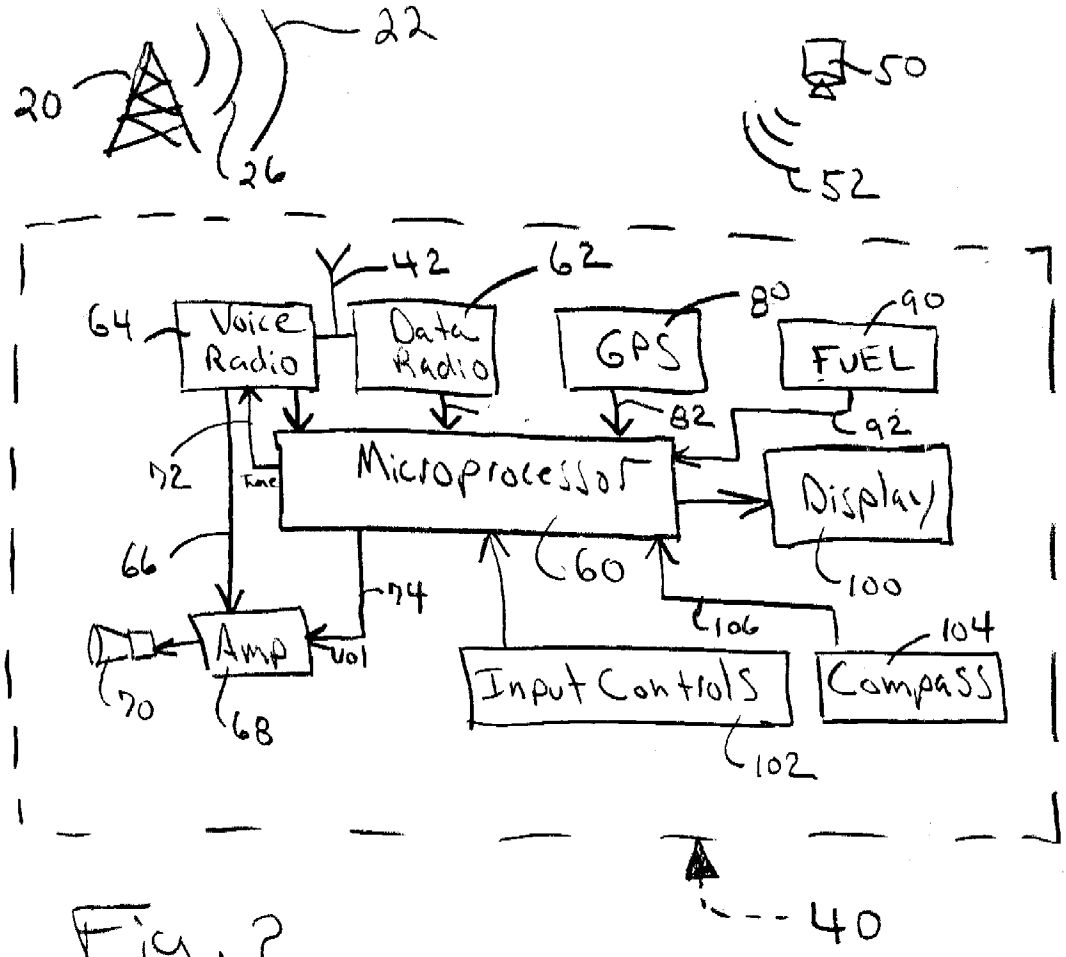

Fig. 2

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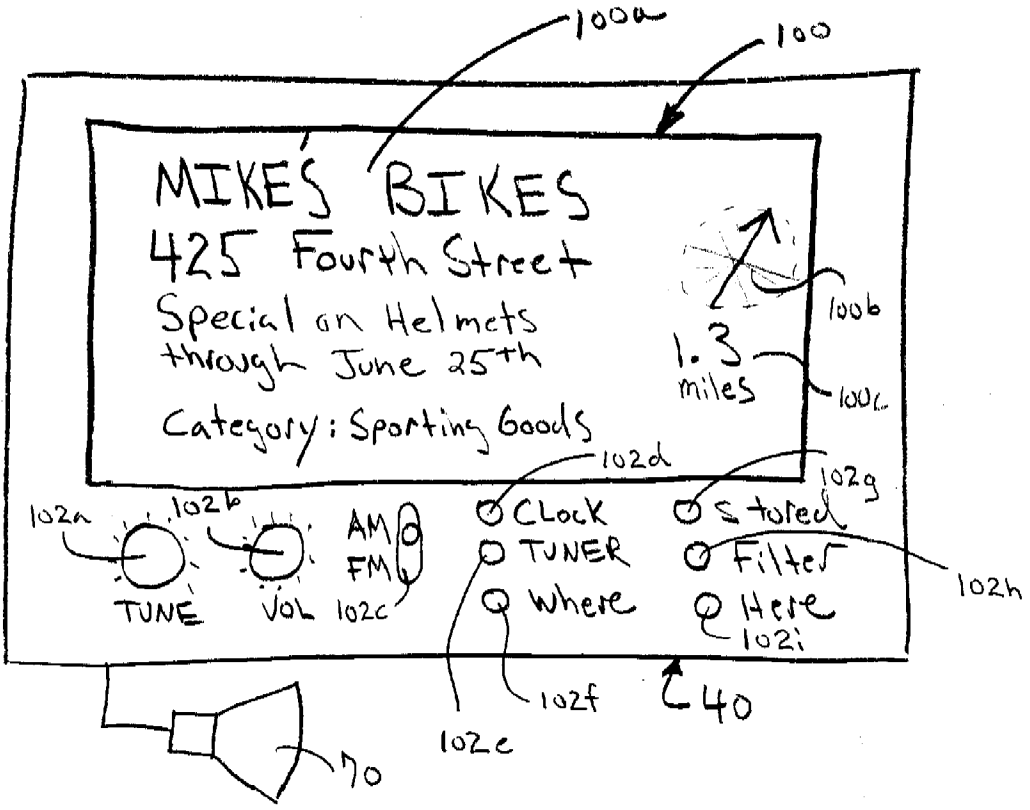

Fig. 3

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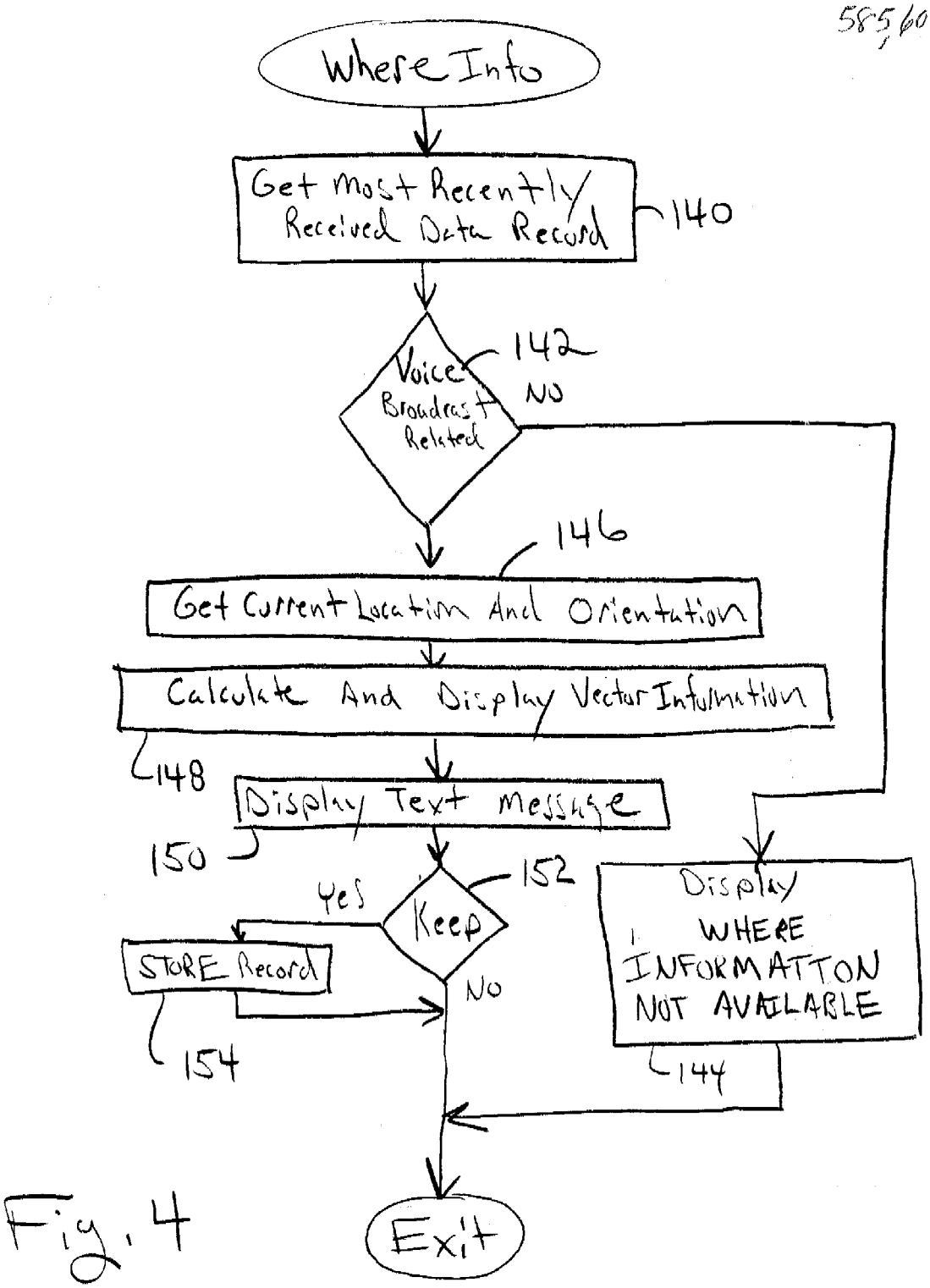

Fig. 4

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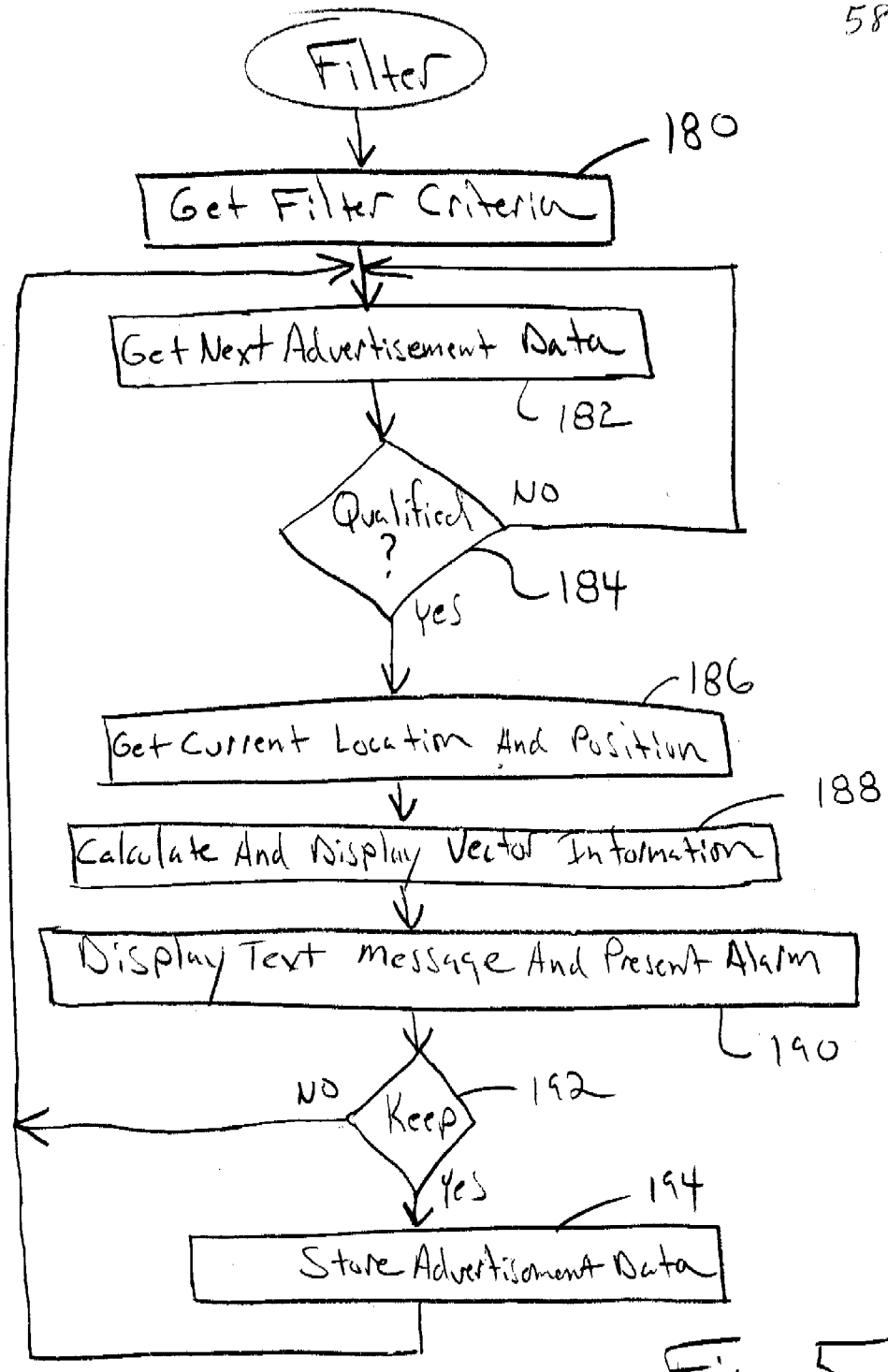

Fig. 5

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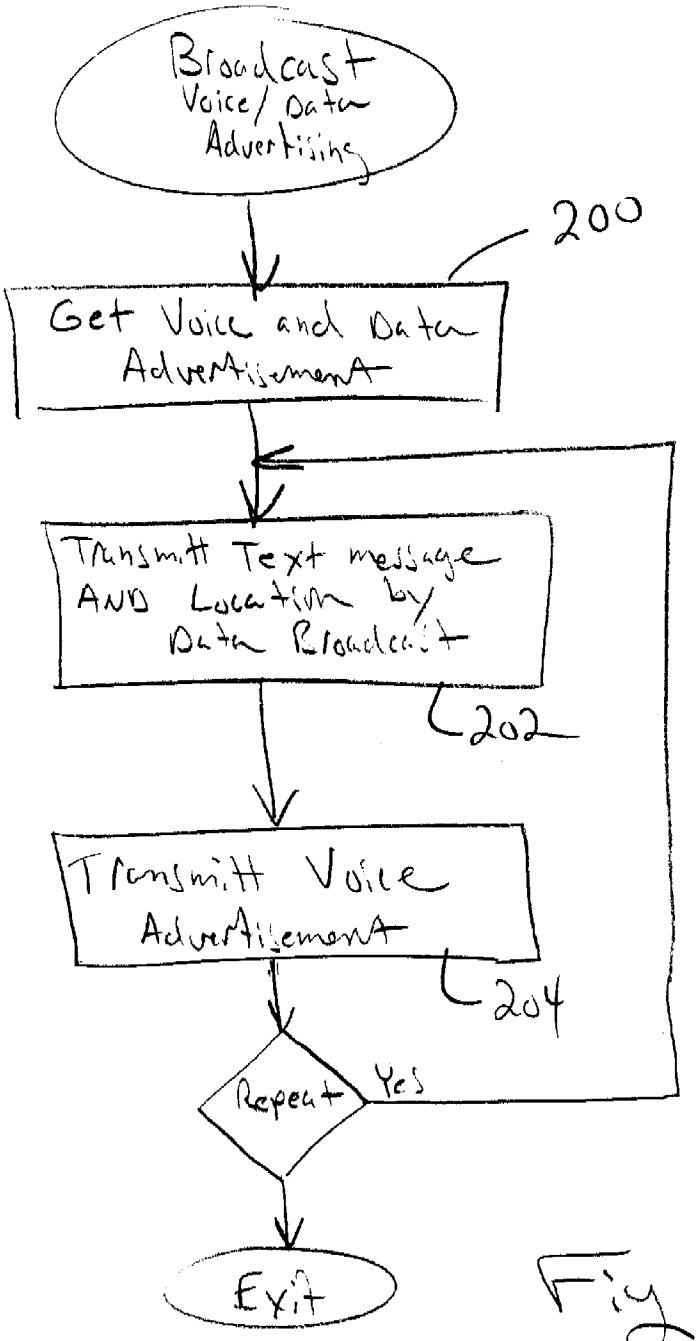

Fig. 6

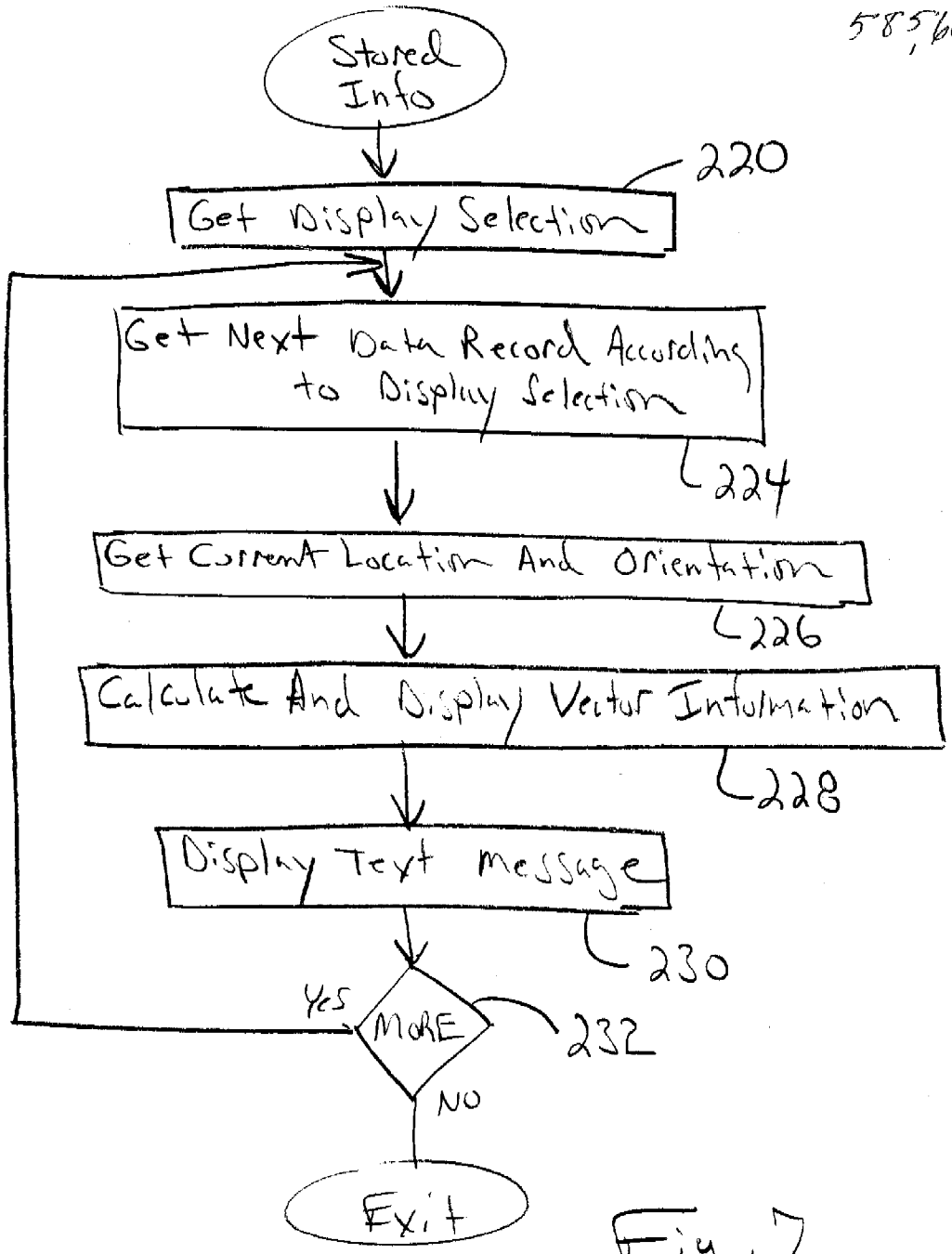

Fig. 7

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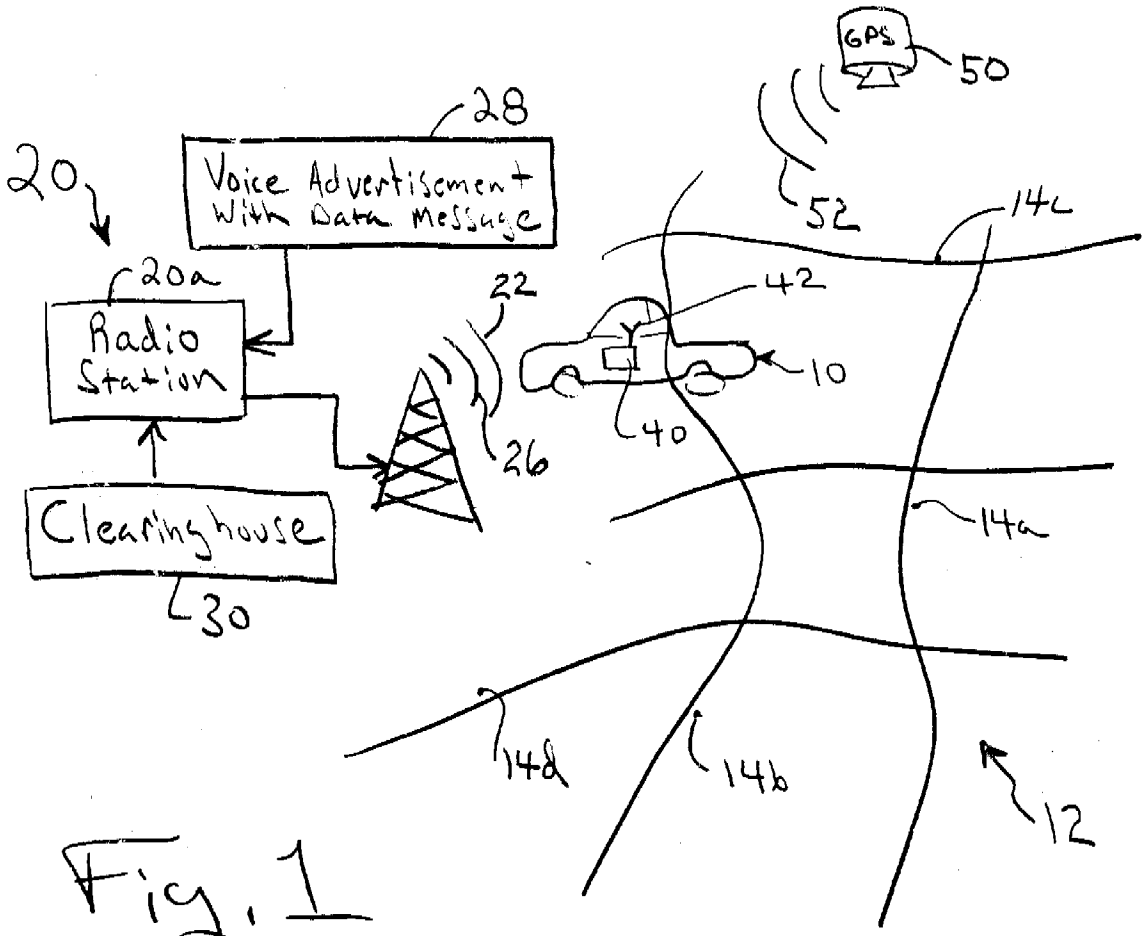

Fig. 1

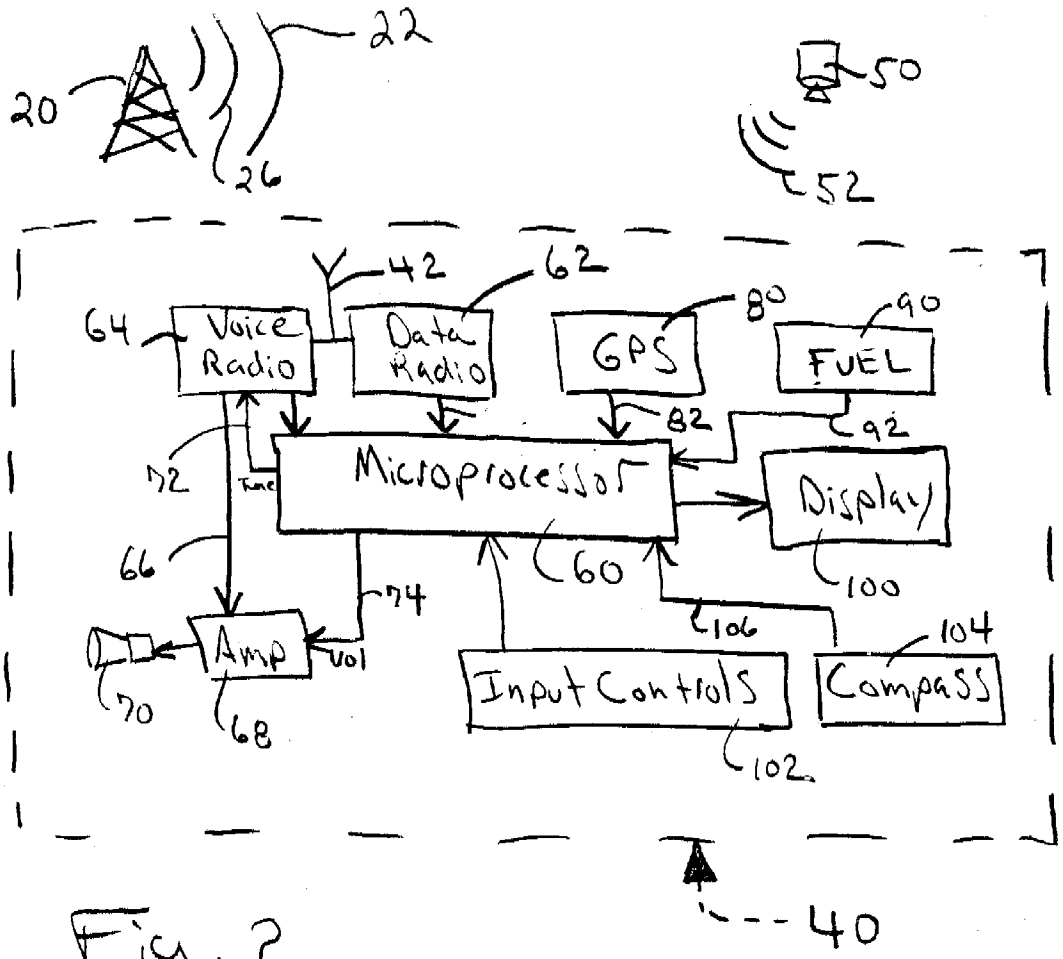

Fig. 2

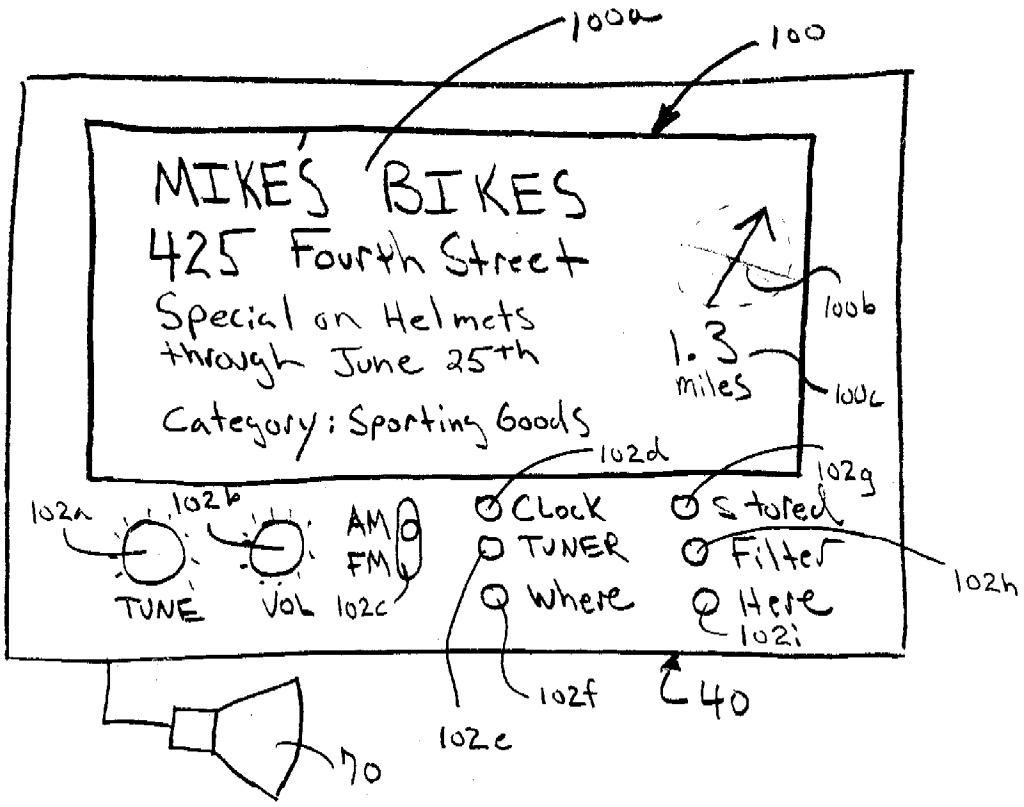

Fig. 3

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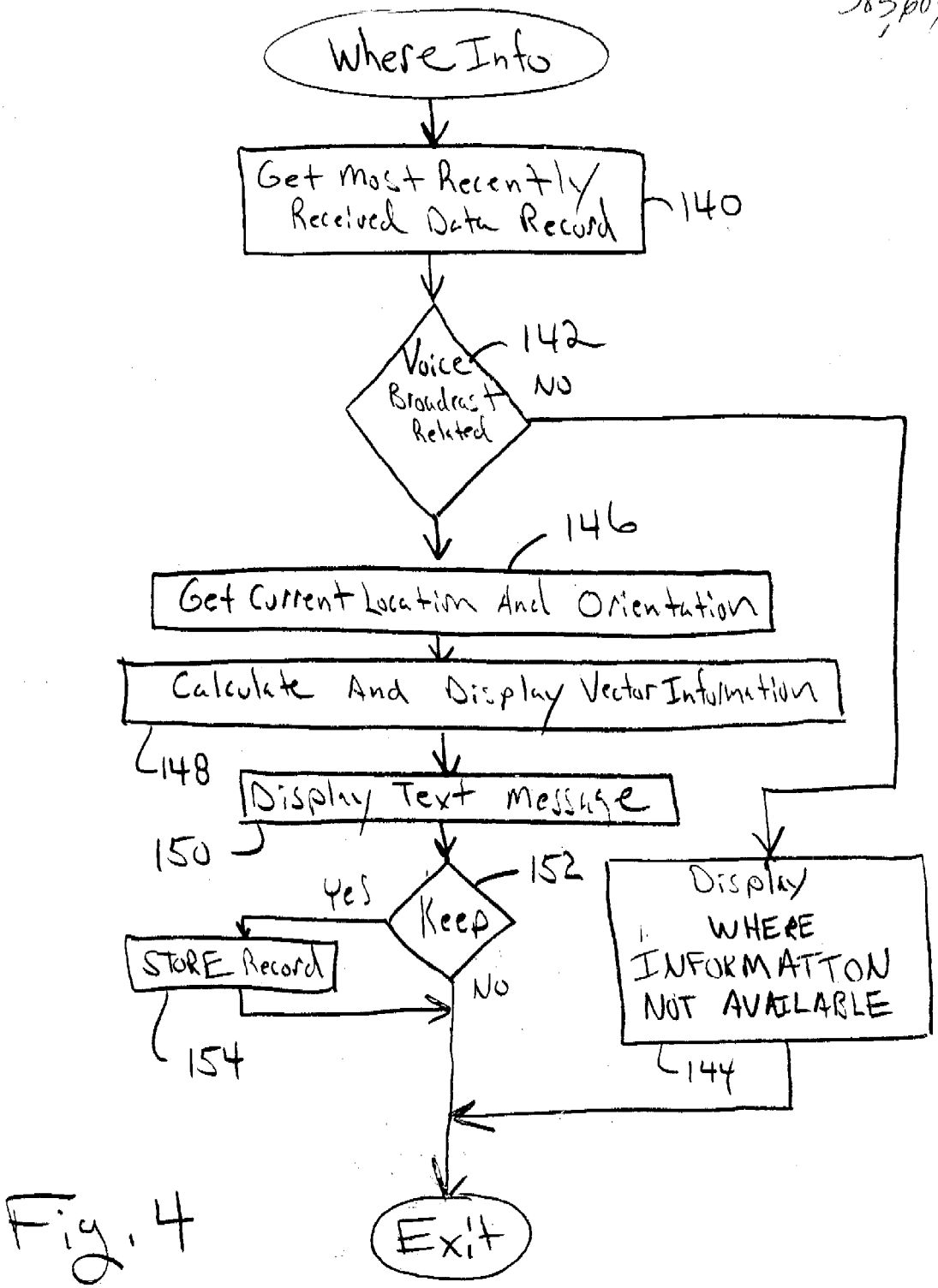

Fig. 4

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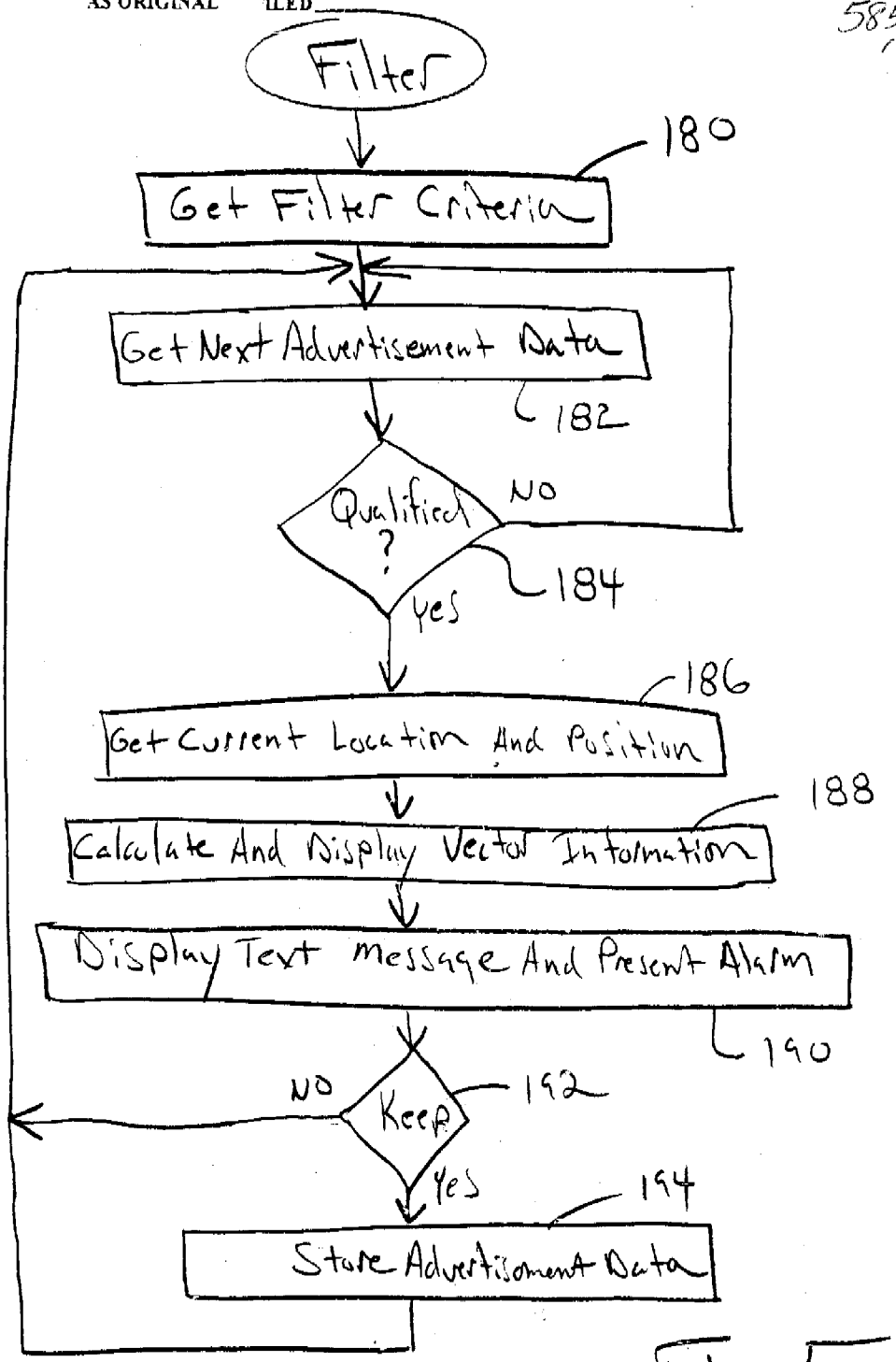

Fig. 5

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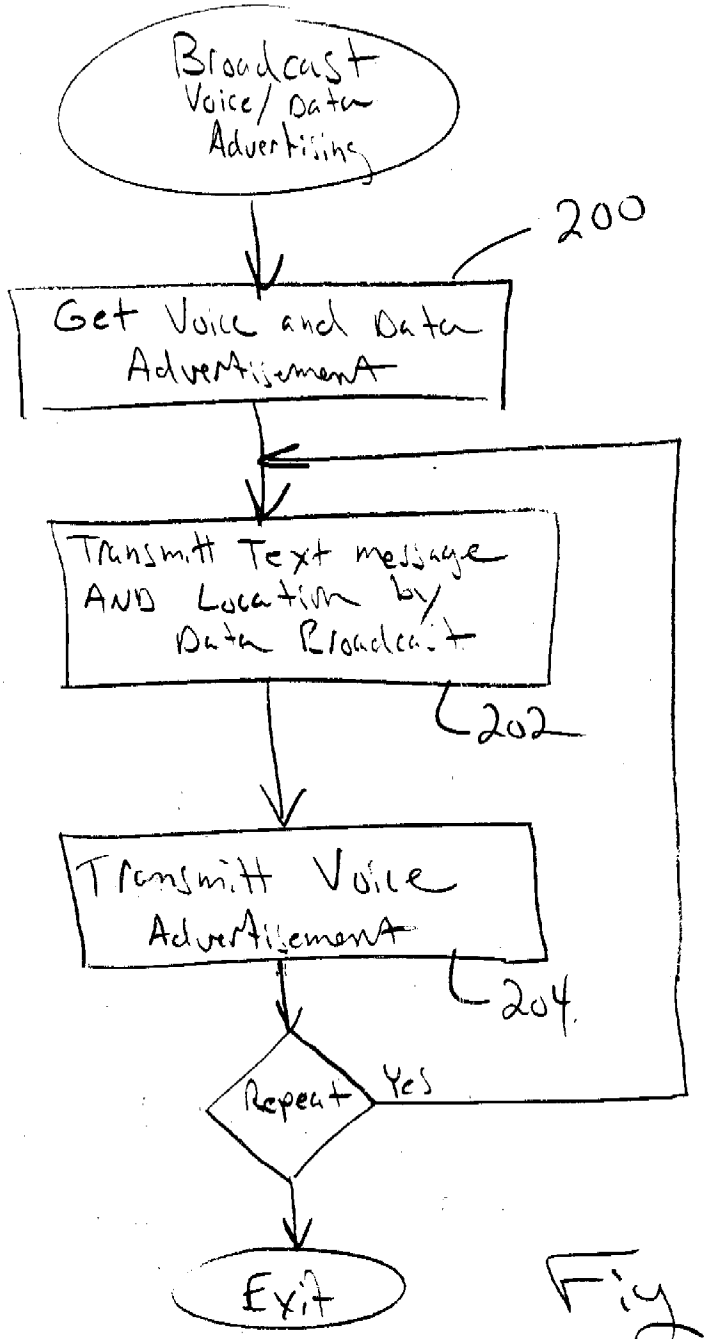

Fig. 6

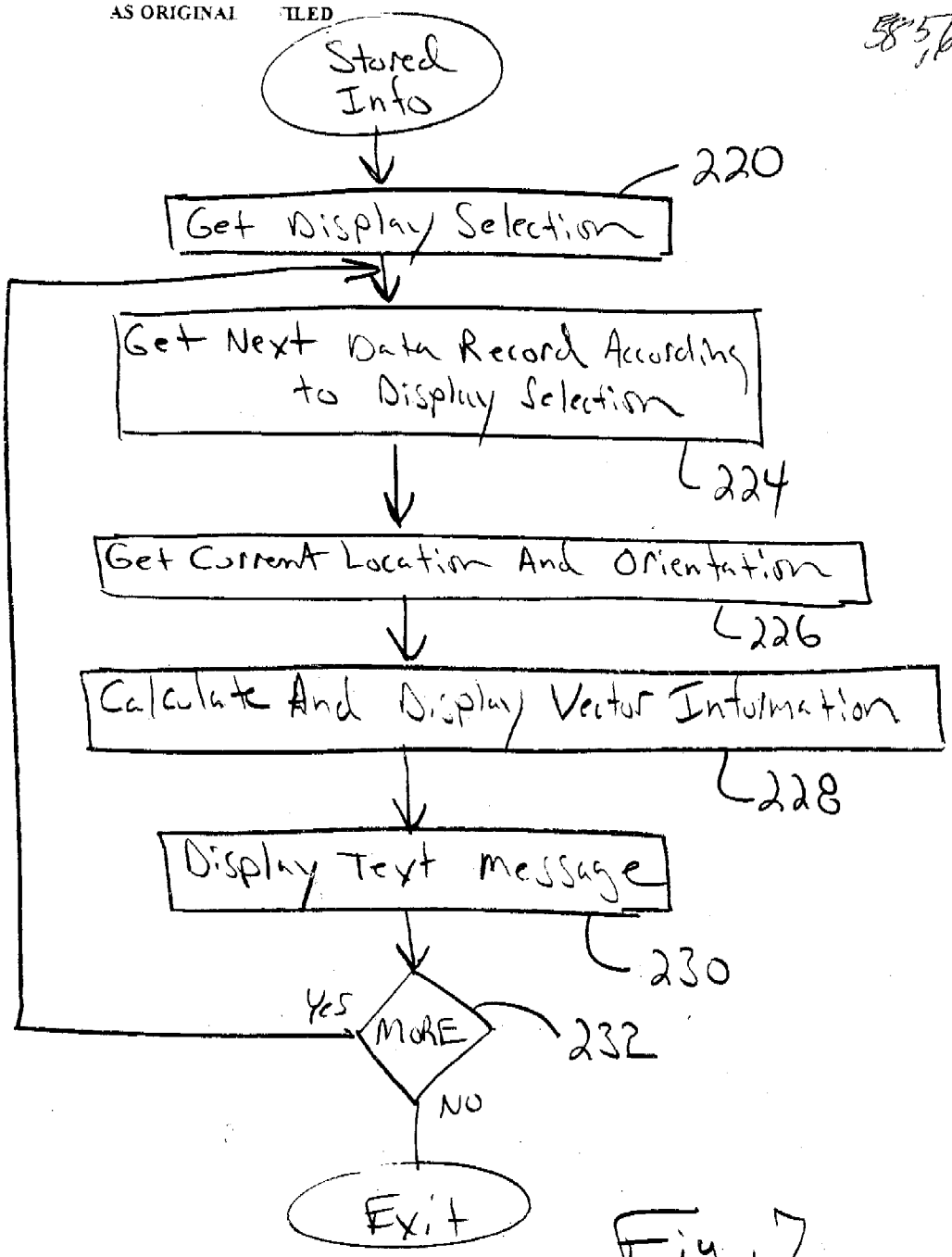

Fig. 7

08/282893

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July 29, 1994

Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Dear Sir:

Enclosed herewith for filing by Express Mail is an application for U. S. Letters Patent, including:

26 pages Specification
1 pages Abstract
14 Claims
7 sheets of Drawings
Declaration
Filing Fee Check ($710.00)
Postcard
Power of Attorney
Assignment
Check in the amount of $40.00
Assignment Cover Sheet
For: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION
P-126
Inventor: Michael C. Park

This application is being filed by Express Mail and a filing date of July 29, 1994 is requested.

Respectfully submitted,

Keith A. Cushing
Attorney for Applicant
Reg. No. 32,407

CERTIFICATE OF MAILING - EXPRESS MAIL

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U. S. Postal Service as Express Mail No. **EF310161589 US**, in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. on the date indicated below.

Date 7/29/94

Keith A. Cushing
Attorney of Record
Reg. No. 32,407

Gy 2202

I hereby certify that on 9/26 1994 this document is being deposited with the United States Postal Service as FIRST CLASS MAIL addressed to The Commissioner of Patents and Trademarks, Washington, DC 20231

by: _____
Elmer Galbi Reg. No 19,761

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application:
Inventor: Michael C. Park

Serial No.: 08/282,893

Filed: 07/29/94

Title: Dual Channel Advertising Reference Vehicle Location

Art Unit: 2202
Examiner:

OCT 5 1994

Docket: P126

Date of this paper: September 26, 1994

Change of Address Notice #2 T.W. 10-7-94

Commissioner of Patents and Trademarks
Washington, D. C. 20231

Sir:

Please note that the address of applicant's attorney has been changed.

All future correspondence should be addressed to:

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Phone contact number 503 531-1516

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UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/282,893	07/29/94	PARK	M P126

EXAMINER
~~BLUM, T~~

22M2/0321

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BEAVERTON OR 97006

ART UNIT	PAPER NUMBER
2202	3

DATE MAILED: 03/21/95

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☑ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), ___ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☑ Notice of References Cited by Examiner, PTO-892.
2. ☑ Notice re Patent Drawing, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☑ Claims 1-14 are pending in the application.
   Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☑ Claims 1-14 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-14 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kashiwazaki.

Kashiwazaki teaches the claimed method for providing travel information relative to vehicle location including: transmitting information of potential interest (received by 29), determining the current location of the vehicle 20, and displaying the direction and distance from the current vehicle location to the geographic point (Figure 8).

3.The Takanabe et al and Noreen et al patent are cited to show vehicle location systems which include a GPS receiver. Note Figures 3 and 6, and column 4, line 28 of Takanabe et al and columns 10 and 14 of Noreen et al.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theodore Blum whose telephone number is (703) 308-0481.

March 16, 1995

Theodore M. Blum
THEODORE M. BLUM
EXAMINER
GROUP ART UNIT 222

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP–APART AND REMOVE CARBON

FORM PTO-892 (REV. 2-92) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NUMBER
NOTICE OF REFERENCES CITED	08/282,893	2202	3
	APPLICANT(S) PARK		

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	A	5365449	11-94	KASHIWAZAKI	364	449	9-92
	B	5303393	4-94	NOREEN ET AL	455	12.1	
	C	5359527	10-94	TAKANABE ET AL	364	449	10-92
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWG	PERTINENT PP. SPEC.
	L								
	M								
	N								
	O								
	P								
	Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

R	
S	
T	
U	

EXAMINER	DATE
T. BLUM	3-16-95

* A copy of this reference is not being furnished with this office action.
(See Manual of Patent Examining Procedure, section 707 05 (a).)

Form PTO 948 (Rev. 10-93) U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office Application No. 08/282893

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

PTO Draftpersons review all originally filed drawings regardless of whether they are designated as formal or informal. Additionally, patent Examiners will review the drawings for compliance with the regulations. Direct telephone inquiries concerning this review to the Drawing Review Branch, 703-305-8404.

The drawings filed (insert date) 2/29/94, are
A. ___ not objected to by the Draftsperson under 37 CFR 1.84 or 1.152.
B. ✓ objected to by the Draftsperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawings must be submitted according to the instructions on the back of this Notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: Black ink. Color.
   ___ Not black solid lines. Fig(s)_____
   ___ Color drawings are not acceptable until petition is granted.

2. PHOTOGRAPHS. 37 CFR 1.84(b)
   ___ Photographs are not acceptable until petition is granted.

3. GRAPHIC FORMS. 37 CFR 1.84 (d)
   ___ Chemical or mathematical formula not labeled as separate figure. Fig(s)_____
   ___ Group of waveforms not presented as a single figure, using common vertical axis with time extending along horizontal axis. Fig(s)_____
   ___ Individuals waveform not identified with a separate letter designation adjacent to the vertical axis. Fig(s)_____

4. TYPE OF PAPER. 37 CFR 1.84(e)
   ___ Paper not flexible, strong, white, smooth, nonshiny, and durable. Sheet(s)_____
   ___ Erasures, alterations, overwritings, interlineations, cracks, creases, and folds not allowed. Sheet(s)_____

5. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable paper sizes:
   21.6 cm. by 35.6 cm. (8 1/2 by 14 inches)
   21.6 cm. by 33.1 cm. (8 1/2 by 13 inches)
   21.6 cm. by 27.9 cm. (8 1/2 by 11 inches)
   21.0 cm. by 29.7 cm. (DIN size A4)
   ___ All drawing sheets not the same size. Sheet(s)_____
   ___ Drawing sheet not an acceptable size. Sheet(s)_____

6. MARGINS. 37 CFR 1.84(g): Acceptable margins:

Paper size			
21.6 cm. X 35.6 cm. (8 1/2 X 14 inches)	21.6 cm X 33.1 cm. (8 1/2 X 13 inches)	21 cm. X 27.9 cm. (8 1/2 X 11 inches)	21 cm. X 29.7 cm. (DIN Size A4)
T 5.1 cm. (2")	2.5 cm. (1")	2.5 cm. (1")	2.5cm.
L .64 cm. (1/4")	.64 cm. (1/4")	.64 cm. (1/4")	2.5 cm.
R .64 cm. (1/4")	.64 cm. (1/4")	.64 cm. (1/4")	1.5 cm.
B .64 cm. (1/4")	.64 cm. (1/4")	.64 cm. (1/4")	1.0 cm.

   Margins do not conform to chart above.
   Sheet(s) A, S, T
   ___ Top (T) ___ Left (L) ___ Right (R) ___ Bottom (B)

7. VIEWS. 37 CFR 1.84(h)
   REMINDER: Specification may require revision to correspond to drawing changes.
   ___ All views not grouped together. Fig(s)_____
   ___ Views connected by projection lines. Fig(s)_____
   ___ Views contain center lines. Fig(s)_____

Partial views. 37 CFR 1.84(h)(2)
   ___ Separate sheets not linked edge to edge. Fig(s)_____
   ___ View and enlarged view not labeled separately. Fig(s)_____
   ___ Long view relationship between different parts not clear and unambiguous. 37 CFR 1.84(h)(2)(ii) Fig(s)_____

Sectional views. 37 CFR 1.84(h)(3)
   ___ Hatching not indicated for sectional portions of an object. Fig(s)_____
   ___ Hatching of regularly spaced oblique parallel lines not spaced sufficiently. Fig(s)_____
   ___ Hatching not at substantial angle to surrounding axes or principal lines. Fig(s)_____
   ___ Cross section not drawn same as view with parts in cross section with regularly spaced parallel oblique strokes. Fig(s)_____
   ___ Hatching of juxtaposed different elements not angled in a different way. Fig(s)_____

Alternate position. 37 CFR 1.84(h)(4)
   ___ A separate view required for a moved position. Fig(s)_____

Modified forms. 37 CFR 1.84(h)(5)
   ___ Modified forms of construction must be shown in separate views. Fig(s)_____

8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)
   ___ View placed upon another view or within outline of another. Fig(s)_____
   ___ Words do not appear in a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s)_____

9. SCALE. 37 CFR 1.84(k)
   ___ Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s)_____
   ___ Indication such as "actual size" or "scale 1/2" not permitted. Fig(s)_____
   ___ Elements of same view not in proportion to each other. Fig(s)_____

10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)
   ✓ Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (except for color drawings). Fig(s) 1-7

11. SHADING. 37 CFR 1.84(m)
   ___ Shading used for other than shape of spherical, cylindrical, and conical elements of an object, or for flat parts. Fig(s)_____
   ___ Solid black shading areas not permitted. Fig(s)_____

12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)
   ✓ Numbers and reference characters not plain and legible. 37 CFR 1.84(p)(1) Fig(s) 1-7
   ___ Numbers and reference characters used in conjuction with brackets, inverted commas, or enclosed within outlines. 37 CFR 1.84(p)(1) Fig(s)_____
   ___ Numbers and reference characters not oriented in same direction as the view. 37 CFR 1.84(p)(1) Fig(s)_____
   ___ English alphabet not used. 37 CFR 1.84(p)(2) Fig(s)_____
   ✓ Numbers, letters, and reference characters do not measure at least .32 cm. (1/8 inch) in height. 37 CFR(p)(3) Fig(s) 1-7 in part

13. LEAD LINES. 37 CFR 1.84(q)
   ___ Lead lines cross each other. Fig(s)_____
   ___ Lead lines missing. Fig(s)_____
   ___ Lead lines not as short as possible. Fig(s)_____

14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t)
   ___ Number appears in top margin. Fig(s)_____
   ___ Number not larger than reference characters. Fig(s)_____
   ___ Sheets not numbered consecutively, and in Arabic numerals, beginning with number 1. Sheet(s)_____

15. NUMBER OF VIEWS. 37 CFR 1.84(u)
   ___ Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s)_____
   ___ View numbers not preceded by the abbreviation Fig. Fig(s)_____
   ___ Single view contains a view number and the abbreviation Fig.
   ___ Numbers not larger than reference characters. Fig(s)_____

16. CORRECTIONS. 37 CFR 1.84(w)
   ___ Corrections not durable and permanent. Fig(s)_____

17. DESIGN DRAWING. 37 CFR 1.152
   ___ Surface shading shown not appropriate. Fig(s)_____
   ___ Solid black shading not used for color contrast. Fig(s)_____

ATTACHMENT TO PAPER NO._____ REVIEWER Tammy DATE 9/1/94

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/282893	7-29-94	PARK	P126

EXAMINER	
T. BLUM	
ART UNIT	PAPER NUMBER
2202	4

DATE MAILED:

EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

(1) MR. GALBI (3) _____

(2) MR. BLUM (4) _____

Date of interview 7-6-95

Type: ☐ Telephonic ☑ Personal (copy is given to ☐ applicant ☑ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☑ No. If yes, brief description: _____

Agreement ☐ was reached with respect to some or all of the claims in question. ☑ was not reached.

Claims discussed: 1, 7, 11

Identification of prior art discussed: all

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:

The last office action was discussed.

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

Unless the paragraphs below have been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW (e.g., items 1–7 on the reverse side of this form). If a response to the last Office action has already been filed, then applicant is given one month from this interview date to provide a statement of the substance of the interview.

☐ It is not necessary for applicant to provide a separate record of the substance of the interview.

☐ Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action.

Theodore M. Blum
Examiner's Signature

PTOL-413 (REV. 1-84)

ORIGINAL FOR INSERTION IN RIGHT HAND FLAP OF FILE WRAPPER

RECEIVED
JUL 13 1995
GROUP 2200

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: 08/282,893

Filing Date: 07/29/79

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Referencing Vehicle Location

Art Group: 2202

Examiner: BLUM, T

Date of this paper: June 15, 1995

Amendment

Responsive to Office Action Dated 03/21/95

Commissioner of Patents and Trademarks
Box: Non-Fee Amendment
Washington, D.C. 20231

Dear Sir:

Please amend the claims in the subject application as follows:

Cancel claims 2-6 and 8-10 and 12-14.

Amend claims 1, 7 and 14 as follows:

(see next page)

1. (amended) A method for providing travel information relative to vehicle location, the method comprising the steps:

transmitting information of potential interest, said information of potential interest including records, each record including at least a location corresponding to a geographic point;

receiving at travel information devices said information of potential interest;

determining at each travel information device a current location therefor; and

means for selecting at each travel information device ones of said records for display, said selection being based on the location of said vehicle said display including indication of direction and distance to the corresponding geographic point in relation to said current location for said travel information device.

7. (amended) A method of operating a travel information device carried by a vehicle along a travel route, the method comprising the steps:

receiving data records by radio signal, each data record corresponding to a potential point of interest along a travel route and including at least a geographic location for said potential point of interest;

[selecting and] storing [nes of]said data records;

<u>selecting for display records depending upon the location of said vehicle;</u>

calculating current location for said travel information device; and

displaying position relative to said current location of a geographic location corresponding to a selected data record.

11 (amended) . A method of providing travel information at a vehicle, the method comprising the steps:

detecting said vehicle position;

collecting [information] records relevant to geographic points of interest, said information including a geographic location for each of said geographic points of interest;

selecting for display records based upon the relative location of said vehicle and the location of the geographic point in the selected record; and

displaying relative to a current location as established in said detecting step a distance to and a distance toward a selected one of said geographic points of interest.

REMARKS:

This amendment is responsive to the Office Action dated 03/21/21. Claims 2-6 and 8-10 and 12-14 have been canceled in order to simplify the issues. The inventions previously covered by these claims are covered by remaining claims Claims 1, 7 and 11 which are the only claims which remain in this application. Reconsideration and allowance of claims 1, 7 and 11 as amended is requested for the following reasons:

The subject application was rejected under 35 U.S.C. § 102(b) based upon Kashiwazaki (Patent 5,365,449). Kashiwazaki shows a system which detects the present location of a vehicle, displays a map, and displays information related to a particular destination.

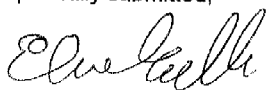
The embodiment shown in Figure 10 includes a receiver (29) which receives by radio a schedule "for sight-seeing a set of famous places in one district" (see column 7 lines 35 et seq of the reference).

In contrast to the above, the system shown and claimed in the present application receives by radio, advertisements concerning various business establishments. When the system detects that it is in the vicinity of one of these establishments, the information concerning that establishment is displayed. The key difference is that with the present invention there is no specification of a destination, route or schedule (as there is in the the system shown in the Kashiwazaki reference). With the present invention the records transmitted to the system are stored and as the vehicle goes past an establishment which has a corresponding record stored, the information concerning that establishment is automatically displayed. Thus, it is in the manner that records are selected for display that the present invention differs from the system shown in the Kashiwazaki reference. The applicant's claims have been amended to focus more clearly on applicant's technique for selecting records for display.

The examiner also cited the Takanabe and Noreen references; however, there was no rejection based on these references. These references merely show vehicle locating systems. The do not show the record display system shown and claimed by the applicant.

Since the references do not shown or suggest applicants invention, reconsideration of claims 1, 7 and 1 as amended is respectrfully requested.

Rspectfully submitted,



Elmer Galbi Reg No 19,761
Seiko Communications Systems Inc.
1625 NW Amber Glen Court #140
Beaverton, OR 97006

Telephone: 503-531-1516

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address : COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/282,893	07/29/94	PARK	M P126

EXAMINER
BLUM, T

22M2/0718

ELMER W GALBI
SEIKO TELECOMMUNICATION SYSTEMS INC
1625 N.W. AMBER GLEN COURT,
SUITE 140
BEAVERTON OR 97006

ART UNIT	PAPER NUMBER
2202	6

DATE MAILED: 07/18/95

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☑ Responsive to communication filed on 6-19-95 ☑ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), ___ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice re Patent Drawing, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☑ Claims 1, 7, 11 are pending in the application.
   Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☑ Claims 1, 7, 11 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

1. Claim 1 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is a mixed method and apparatus claim. The method steps are "transmitting", "receiving", and "determining". The apparatus is "means for selecting".

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 7, and 11, are rejected under 35 U.S.C. § 102(b) as being anticipated by Kashiwazaki.

Kashiwazaki teaches the claimed method for providing travel information relative to vehicle location including:

determining the current location of the vehicle (GPS receiver 20),

transmitting information of potential interest (received by vehicle receiver 29 shown in Figure 10, see column 7, lines 65+) including records (Figure 2),

each record including at least a location corresponding to a geographic point (Figure 2),

selecting at each travel information device (vehicle) ones of said records (Figure 2) for display (Figure 8),

said selection being based on the location of said vehicle (column 8, lines 14-24).

4. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theodore Blum whose telephone number is (703) 308-0481.

Theodore M. Blum

July 17, 1995

THEODORE M. BLUM
EXAMINER
GROUP ART UNIT 222

I hereby certify that on 7/27, 1995 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: _____
Elmer Galbi, Reg. No. 19,761,
Seiko Communications Systems Inc.
1625 NW Amber Glen Court, #140
Beaverton, OR 97006 Telephone 503-531-1516

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: 08/282,893

Filing Date: 07/29/94

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Referencing Vehicle

Art Group: 2202

Examiner: BLUM, I.

Docket: P126

Date of this paper: July 27, 1995

7/ **REQUEST FOR CERTIFIED COPY** -Mooft

T.W. 8-28-95

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Please send a certified copy of the above application to:

Elmer Galbi
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, Suite 140
Beaverton, OR 97006

The undersigned is an attorney of record in the subject application.

Please charge the fee for the above to Deposit Account No. 19-1140 which is the account of Seiko Telecommunication Systems, Inc.

Respectfully submitted,

_____
Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

I hereby certify that on Nov 13, 1995 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: 08/282,893

Filing Date: 07/29/94

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Reference Vehicle Location

Art Group: 2202

Examiner: Blum, T.

Docket: P126

Date of this paper: November 13, 1995

Petition for an Extension of Time to Respond

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Applicant petitions for a one month extension of time to respond to the Office Action dated 07/18/95.

An appropriate response to the Office Action (i.e. a Notice of Appeal) is being filed herewith.

Please charge the fee for this petition ($110.00) and any other appropriate fees in this application to the undersigned's Deposit Account No. 19-1140.

Respectfully submitted,

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

NG11056 12/12/95 08282893 19-1140 110 115 110.00CH

2202

I hereby certify that on Nov 13, 1995, this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

Notice of Appeal
Cofer
12-27-95

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/282,893	**Art Group: 2202**
Filing Date: 07/29/94	**Examiner: Blum, T.**
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Reference Vehicle Location	**Docket: P126**

Date of this paper: November 13, 1995

NOTICE OF APPEAL

From the Examiner to the Board of Patent Appeals and Interferences.

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the decision dated 07/18/95 of the Examiner finally rejecting claims 1, 7 and 11 of the above identified application.

Please charge the fee for this Notice of Appeal (i.e. $290.00) and any additional applicable fees to the undersigned's **Deposit Account** No. 19-1140 which is in the name of Seiko Telecommunication Systems Inc.

Respectfully submitted,

Elmer Galbi

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

MG11057 12/12/95 08282893 19-1140 110 119 290.00CH

08/585604

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

P 30119 01/30/96 08585604 19-1140 030 101 750.00CH P126

PTO-1556
(5/87)

08/585,694 #9 FWC

EXPRESS MAIL LABEL NO. EG 221-059-713 US

Date of Deposit: Jan 10, 1996

I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

#10 Fee B
PS
3/24/96

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner of Patents and Trademarks
Box FWC
Washington, D. C. 20231

January 10, 1996

Dear Sir:

REQUEST FOR A FILE WRAPPER CONTINUATION APPLICATION under 37 CFR 1.62

This is a request for a file wrapper continuation application under the provisions of 37 CFR §1.62. The prior application is identified as follows:

Serial No.: **08/282,893**
Filed: **07/29/94**
Inventor: **Michael C. Park**
Title: **Dual Channel Advertising Referencing Vehicle Location**
Art Unit: **2202, Examiner: Blum, T.**
Docket: P126

The new application has the same inventor and the same title as the prior application. That is, the inventor and title of the new application are:

Inventor: **Michael C. Park**
Title: **Dual Channel Advertising Referencing Vehicle Location**

The applicant's docket number for this new application is P126-FWC.

Please use all the contents of the prior application file wrapper, including the drawings, as the basic papers for the new application. A preliminary amendment is being filed herewith.

Please direct correspondence to:

Elmer Galbi
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, Suite 140
Beaverton, OR 97006
Phone contact number: 503-531-1516

Please charge the $750.00 filing fee for this application to Deposit Account 19-1140 which is in the name of Seiko Telecommunications Corp.

Please note the following:

1) There is no claim to priority to any foreign application under 35 U.S.C. 119.

2) The prior application is assigned of record to Seiko Communications Holding N.V.

3) The power of attorney in the prior application is to:
Elmer Galbi, Reg No. 19761.

4) The specification of the application will be amended by inserting before the first line the sentence:

"This application is a continuation of application Serial Number 08/282,893, filed 07/29/94 which is now abandoned."

5) No payment of the issue fee, abandonment of, or termination of proceedings has occurred in the above identified prior application.

6) The above identified prior application is hereby expressly abandoned as of the filing date of this file wrapper continuation application.

7) Secrecy under 35 USC 122 is hereby waived to the extent that if information or access is available to any application in the file wrapper of this 37 CFR 1.62 application, be it either this application or a prior application in the same file wrapper. The Patent and Trademark Office may provide similar information or access to all the other applications in the same file wrapper.

Respectfully submitted,

Elmer Galbi
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: 503-531-1516

08/585604

EXPRESS MAIL LABEL NO. EG 221-059-713 US

Date of Deposit: Jan 10, 1996

I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/282,893	Art Group: 2202
Filing Date: 07/29/94	Examiner: BLUM, T
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	Docket: P126

Date of this paper: January 10, 1996

Notice of Abandonment

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

An FWC application has been filed on this date. The subject application is hereby abandoned.

Respectfully submitted,

Elmer W. Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, Oregon 97006
Direct calls to: (503) 531-1516

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

FROM: Sallye Rayford, Manager
Initial Review Division

SUBJECT: Receipt of Papers and Fees File Under 37 CFR 1.10 by Express Mail

The filing date of Jan 16, 1996 is the correct date. The date on the Express Mail Label under 37 CFR 1.10 is Jan 10, 1996 On that date the PTO was closed all day due to adverse weather conditions (authorized by the Office of Personnel Management) or a _____ normally scheduled Federal holiday within the District of Columbia. In accordance with 37 CFR 1.6 the papers have been stamped with the next succeeding day which is not a Saturday, Sunday or Federal holiday within the District of Columbia. The provision of 35 U.S.C. 21 (b) apply.

The papers were not stamped with the date on the certificate of mailing Express Mail Because the date on the certificate does not coincide with the date of deposit on the Express Mail label which the PTO takes evidence of when the package was mailed.

Date on certificate of mailing by Express Mail is _____

Date on Express Mail label is _____

Date of Receipt in PTO is _____

Therefore, the filing date is _____

The papers are not entitled to the benefits of 37 CFR 1.10 because:

_____

_____

Signed: D. Bell

Date: Jan 19, 1996

#11 Rec
OJ 3/29/96

EXPRESS MAIL LABEL NO. EG 221-059-713 US

Date of Deposit: Jan 10, 1996

I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: _____

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PRIOR application:	
Serial Number: 08/282,893	Art Group: 2202
Filing Date: 07/29/94	Examiner: BLUM, T
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	Docket: P126

Date of this paper: January 10, 1996

Preliminary Amendment Filed With FWC Application Responsive to the Office Action dated 07/18/95

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Please amend the above referenced application as follows:

In the Specification:

After the title and prior to the first line insert:

This application is a continuation of application Serial Number 08/282,893, filed 07/29/94 which is now abandoned.

In the claims:

Please cancel claims 1, 7, and 11.

Add claims 15, 16, and 17 as shown below.

15. A method for providing specific time and location sensitive advertising information to a moving vehicle, said specific time and location sensitive advertising information being selected from a large body of advertising information including a large number of records, each record including a specific time and location sensitive advertising information, the method comprising the steps:

transmitting to said vehicle by radio time said large body of advertising information,

receiving at said vehicle said large body of advertising information;

at a specific time, determining the location of said vehicle; and

selecting for display at said vehicle one of said records for display, said selection being at least in part based on the time of day and upon the location of said vehicle .

16. A method of providing time and location sensitive advertising information to the operator of a moving vehicle, the method comprising the steps:

receiving multiple data records by radio signal, each data record including time and location sensitive advertising information;

storing said data records;

calculating current location for said vehicle; and

selecting for display specific time and location specific advertising information depending upon the location of said vehicle;

displaying said selected time and location specific advertising information.

17. A method of providing travel information at a vehicle, the method comprising the steps:

collecting records relevant to multiple geographic points of interest, said information including a geographic location for each of said geographic points of interest;

detecting said vehicle position;

selecting for display records based upon the relative location of said vehicle and the location of the geographic point in the selected record; and

displaying relative to a current location as established in said detecting step a distance to and a distance toward a selected one of said geographic points of interest.

REMARKS:

This is a preliminary amendment being filed with an FWC application. This preliminary amendment is being filed in response to the Office Action dated 07/18/95. A notice of appeal was filed in the parent application on 11/13/95.

Claims 15, 16 and 17 are now in this application. These claims correspond somewhat to previous claims 1, 7 and 11 which have been canceled.

Applicant's prior claim 1 was rejected under 35 U.S.C. §112 second paragraph as indefinite. The problem noted by the examiner has been corrected in the newly submitted claims.

Prior claims 1, 7 and 11 were rejected under 35 U.S.C. § 102 (b) based upon Kashiwazaki. The Kashiwazaki reference shows a system for a vehicle which includes a CD ROM 23 which stores data, a GPS receiver 20 which indicates the location of the receiver, and a memory 30 which stores Schedule data. A map is displayed from the data on the CD ROM. The location of the vehicle is determined by the GPS receiver. The location of the vehicle at any instant is compared to where the vehicle should be according to the schedule information, as indicated at column 6, lines 47 et. seq.

> "In this manner, the schedule data as for the destination of driving, is stored and judged every time when the map is displayed, and the position of the destination and various information related to the destination are automatically displayed in the display map"

Thus, the purpose and operation of the system shown in Kashiwazaki are to determine the location of the vehicle relative to a pre-established schedule information which is stored in the system and to display information relative to the location of the vehicle.

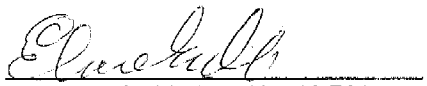
In contrast to the above, the applicant's system is directed to displaying time and location sensitive advertising information. With the applicant's system a large number

of information records are sent to the vehicle by radio. Each record includes a particular piece of time and location sensitive advertising information. At the vehicle the records are selected for display depending upon the time of day and upon the location of the vehicle. As stated in claims 15:

" said selection being at least in part based on the time of day and upon the location of said vehicle "

Applicant's system is dealing with a different type of information than is the reference and the selection process for displaying information is different. Since the reference does not show or suggest applicant's invention, allowance of claims 15, 16 and 17 is respectfully requested.

Respectfully submitted,



Elmer W. Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, Oregon 97006
Direct calls to: (503) 531-1516

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/585,604	01/16/96	PARK	M P126-EWC

EXAMINER
BLUM, T

ART UNIT	PAPER NUMBER
2202	12

22M2/0621

ELMER GALBI
SEIKO COMMUNICATIONS SYSTEM INC
1625 N W AMBER GLEN COURT SUITE 140
BEAVERTON OR 97006

DATE MAILED: 06/21/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☑ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), ____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☑ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____.

Part II SUMMARY OF ACTION

1. ☑ Claims 15-17 are pending in the application.

   Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☑ Claims 15-17 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☑ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

PTOL-326 (Rev. 2/93)

1.The preliminary amendments filed January 16, 1996 are acknowledged.

2. Claims 16 and 17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 16, it is unclear if the displayed "specific time and location specific advertising information" is the received "time and location sensitive advertising information".

In the last two lines of claim 17, "established in said detecting step a distance to and a distance toward" is indefinite.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claim 17 is rejected under 35 U.S.C. § 102(e) as being anticipated by Kashiwazaki.

Kashiwazaki teaches the claimed method for providing travel information relative to vehicle location including: determining the current location of the vehicle (GPS receiver 20), transmitting information of potential interest (received by vehicle receiver 29 shown in Figure 10, see column 7, lines 65+) including records (Figure 2),

each record including at least a location corresponding to a geographic point (Figure 2),
selecting at each travel information device (vehicle) ones of said records (Figure 2) for display (Figure 8),
said selection being based on the location of said vehicle (column 8, lines 14-24).

5. Claims 15-17 are rejected under 35 U.S.C. § 102(e) as being anticipated by Schreder.

Schreder teaches the claimed method of providing time and location sensitive advertising information to the operator of a moving vehicle including: receiving multiple data records (column 13, lines 14-37), storing data 46, calculating current location for said vehicle (18 and 20), "selecting" (column 8, lines 60-67, and column 13, lines 24-37), and displaying 48.

6. Claim 17 is rejected under 35 U.S.C. § 102(e) as being anticipated by Fruchterman et al.

Fruchterman et al teaches the claimed method of providing traveling information at a vehicle (column 11, lines 18-22) including: collecting records of points of interest (column 12, lines 23-35, and column 16, lines 65-67, for example), "selecting" (column 11, lines 6-22), and displaying 8.

7. Claim 17 is rejected under 35 U.S.C. § 102(e) as being anticipated by Sato et al.

Sato et al teaches the claimed method of providing traveling information at a vehicle including: collecting records of points of interest (12, 13, 24, Figures 5 and 9), "selecting" (16), and displaying 23.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 17 is rejected under 35 U.S.C. § 102(b) as being anticipated by Wortham.

Wortham teaches the claimed method of providing traveling information at a vehicle including: collecting records of points of interest (column 9, lines 60-68), "selecting" (column 9, lines 60-68), and displaying 258.

10. The Fisher patent is cited to show a vehicle location system, note claim 12.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theodore Blum whose telephone number is (703) 305-1833.

Theodore M. Blum

THEODORE M. BLUM
EXAMINER
GROUP ART UNIT 222

June 18, 1996

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP–APART AND DISCARD CARBON

FORM PTO-892 (REV. 2-92) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NUMBER
NOTICE OF REFERENCES CITED	08/585604	2202	12
	APPLICANT(S) PARK		

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	A	5 536 544 9	11-94	KASHIWAZAKI	364	449	9-92
	B	5 550 482	4-96	SCHREDER	340	995	6-93
	C	5 470 233	11-95	FRUCHTERMAN ET AL	434	112	3-94
	D	5 353 034	10-94	SATO ET AL	342	457	2-93
	E	5 299 132	3-94	WORTHAM	364	460	
	F	5 507 485	4-96	FISHER	273	32R	4-94
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWG	PERTINENT PP. SPEC.
	L								
	M								
	N								
	O								
	P								
	Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

R	
S	
T	
U	

EXAMINER	DATE	
T. BLUM	6-18-96	

* A copy of this reference is not being furnished with this office action.
(See Manual of Patent Examining Procedure, section 707.05 (a).)

13 GP 2202
Req. Ext. Time
Ltr
12 mo
Copies
11-21-96

I hereby certify that on Nov 5, 1996 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231

By: _____
Elmer Galbi, Reg. No. 19,761,
Seiko Communications Systems Inc.
1625 NW Amber Glen Court, #140
Beaverton, OR 97006 Telephone 503-531-1516

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/585,604	**Art Group:** 2202
Filing Date: 01/16/96	**Examiner:** Blum, T.
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	**Docket:** P126-FWC

Date of this paper: November 5, 1996

Petition for an Extension of Time to Respond

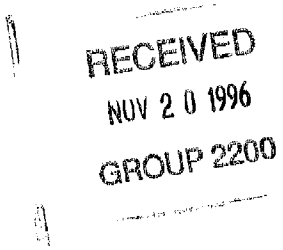
Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Applicant petitions for a two month extension of time to respond to the Office Action dated 06/21/96.

An appropriate response to the Office Action is being filed herewith.

Please charge the fee for this petition ($390.00) and any other appropriate fees in this application to the undersigned's Deposit Account No. 19-1140.



Respectfully submitted,

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

I hereby certify that on 11-5, 1996 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761,
Seiko Communications Systems Inc.
1625 NW Amber Glen Court, #140
Beaverton, OR 97006 Telephone 503-531-1516

11-21-96

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/585,604	Art Group: 2202
Filing Date: 01/16/96	Examiner: Blum, T.
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	Docket: P126-FWC

Date of this paper: November 5, 1996

Amendment Responsive to Office Action Dated 06/21/96

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Please amend the subject application as follows:

In the Claims:

Please cancel claim 17.

Please amend claim 16 as follows:

(see next page)

2. ~~16~~ (amended). A method of providing time and location sensitive advertising information to the operator of a moving vehicle, the method comprising the steps:

receiving multiple data records by radio signal, each data record [including] containing time of day information and location sensitive advertising information;

storing said data records;

calculating current location for said vehicle; and

selecting for display [specific] one of said records containing time of day information and location specific advertising information depending upon the time of day information and the location of said vehicle;

displaying said selected record containing time of day information and location specific advertising information.

REMARKS:

This amendment is responsive to the Office Action dated 6/21/96. A petition for an extension of time to respond is being filed herewith. Claim 17 has been canceled. Claims 15 and 16 are now in this application. Reconsideration and allowance of claims 15 and 16 as amended is respectfully requested for the reasons explained below.

Claims 16 and 17 were rejected under 35 U.S.C. § 112 as indefinite. The potential problems noted by the examiner have been corrected by the above amendments to these claims.

Claims 15-17 were rejected under 35 U.S. C. § 102(e) as being anticipated by Schreder. Schreder shows an automobile navigation and guidance system which receives traffic flow information by radio (see column 6 lines 47 et. seq). The system includes a GPS receiver which gives position information and an inertial navigation system which provides additional position information and which also senses if the vehicle is involved in an accident (see column 6 lines 57 et. seq.). The system shown in Schreder uses RF telecommunications to automatically report the location of the vehicle in the case of an accident. The system also provides the driver with route guidance information.

The invention claimed by the applicant in claims 15 and 16 is directed to and serves an entirely different purpose than does the system shown in Schreder. Furthermore, the elements which comprise the applicant's system are not found in the system shown in the Schreder reference. Applicant's system is directed to providing time and location sensitive advertising material to a driver. The advertising material is sent to the vehicle by radio because the material is time sensitive. A particular piece of time and location advertising material is then presented to the

driver depending upon the time of day and the location of the vehicle. No such system is shown or suggested in the Schreder reference.

The novel elements which comprise applicant's system are specifically recited in applicant's claims. For example claim 16 recites:

> "selecting for display one of said records containing time of day information and location specific advertising information depending upon the time of day information and the location of said vehicle;
>
> displaying said selected record containing time of day information and location specific advertising information."

Since the references do not show or suggest applicant's novel invention, allowance of claims 15 and 16 is respectfully requested.

Respectfully submitted,

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

I hereby certify that on Nov 5, 1996 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: _____

Elmer Galbi, Reg. No. 19,761,
Seiko Communications Systems Inc.
1625 NW Amber Glen Court, #140
Beaverton, OR 97006 Telephone 503-531-1516

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/585,604	Art Group: 2202
Filing Date: 01/16/96	Examiner: Blum, T.
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	Docket: P126-FWC

Date of this paper: November 5, 1996

Transmittal Letter

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Transmitted for filing are the following:

a) Petition for an Extension of Time to Respond
b) Amendment Responsive to Office Action dated 06/21/96
d) Return postcard

Please charge the fee of $390.00 for the petition for extension of time to respond and any other appropriate fees to **Deposit Account No. 19-1140**.

Respectfully submitted,

_____

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/[illegible],601	01/[illegible]/96	PARK	M [illegible]

2201/1127

ELINER GALBI
SEIKO COMMUNICATIONS SYSTEM INC
1625 N W ANDER GLEN COURT SUITE 140
BEAVERTON OR 97006

EXAMINER
BLUM, T

ART UNIT	PAPER NUMBER
2202	15

DATE MAILED: 11/26/96

NOTICE OF ALLOWABILITY

PART I.

1. ☑ This communication is responsive to the amendment filed 11-8-96.
2. ☑ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
3. ☑ The allowed claims are 15, 16.
4. ☐ The drawings filed on _____ are acceptable.
5. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has [_] been received. [_] not been received. [_] been filed in parent application Serial No. _____, filed on _____.
6. ☐ Note the attached Examiner's Amendment.
7. ☐ Note the attached Examiner Interview Summary Record, PTOL-413.
8. ☐ Note the attached Examiner's Statement of Reasons for Allowance.
9. ☐ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
10. ☐ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II.

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

1. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
2. ☑ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
   a. ☑ Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. 3. CORRECTION IS REQUIRED.
   b. ☐ The proposed drawing correction filed on _____ has been approved by the examiner. CORRECTION IS REQUIRED.
   c. ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
   d. ☑ Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

Attachments:

- _ Examiner's Amendment
- _ Examiner Interview Summary Record, PTOL-413
- _ Reasons for Allowance
- _ Notice of References Cited, PTO-892
- _ Information Disclosure Citation, PTO-1449
- _ Notice of Informal Application, PTO-152
- _ Notice re Patent Drawings, PTO-948
- _ Listing of Bonded Draftsmen
- _ Other

Theodore M. Blum

THEODORE M. BLUM
EXAMINER
GROUP ART UNIT 222

PTOL-37 (REV. 4-89) *

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: Box ISSUE FEE
ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

22M1/1126

PALMER GALST
SEIKO COMMUNICATIONS SYSTEM INC
1625 N W AMBER GLEN COURT SUITE 140
BEAVERTON OR 97006

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT		DATE MAILED
08/585,604	01/16/96	002	BLUM, T	2202	11/26/96
First Named Applicant	PARK,		MICHAL C		

TITLE OF INVENTION: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 P126-PWC	342-357.000	G92	UTILITY	NO	$1290.00	02/26/97

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as yes, verify your current SMALL ENTITY status:

A. If the status is changed, pay twice the amount of the FEE DUE shown and notify the Patent and Trademark Office of the change in status, or
B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or

B. File verified statementof Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "6b" of Part B should be completed.

III. All communications regarding this application must give application number and batch number. Please direct all communication prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

3. PATENT AND TRADEMARK OFFICE COPY

4850 4100 M

#9 Mail

BATCH: G92
SERIAL NO.: 08/585,604
FILING DATE: 01/16/96

EXPRESS MAIL LABEL NO. EF 865-834-765 US

Date of Deposit: 12/20, 1996
I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Box Issue Fee, Washington, D.C. 20231.

By: _____
Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED
Publishing Division
DEC 20 1996
06

In re application:

Serial Number: 08/585,604

Filing Date: 01/16/96

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Referencing Vehicle Location

Art Group: 2202

Examiner: Blum, T.

Docket: P126-FWC

Date of this paper: December 20, 1996

LETTER TO THE CHIEF DRAFTSMAN

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Enclosed are the formal drawings for the subject application. **Six sheets of formal drawings are enclosed.** We have received a NOTICE OF ALLOWANCE AND ISSUE FEE DUE for the subject application.

The enclosed drawings conform to the previous informal drawings and add no new matter. The serial number and art group are written on the reverse side of the drawings. If there are any problems with the enclosed drawings, you can contact applicant's attorney by telephone at 503-531-1516.

Respectfully submitted,

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

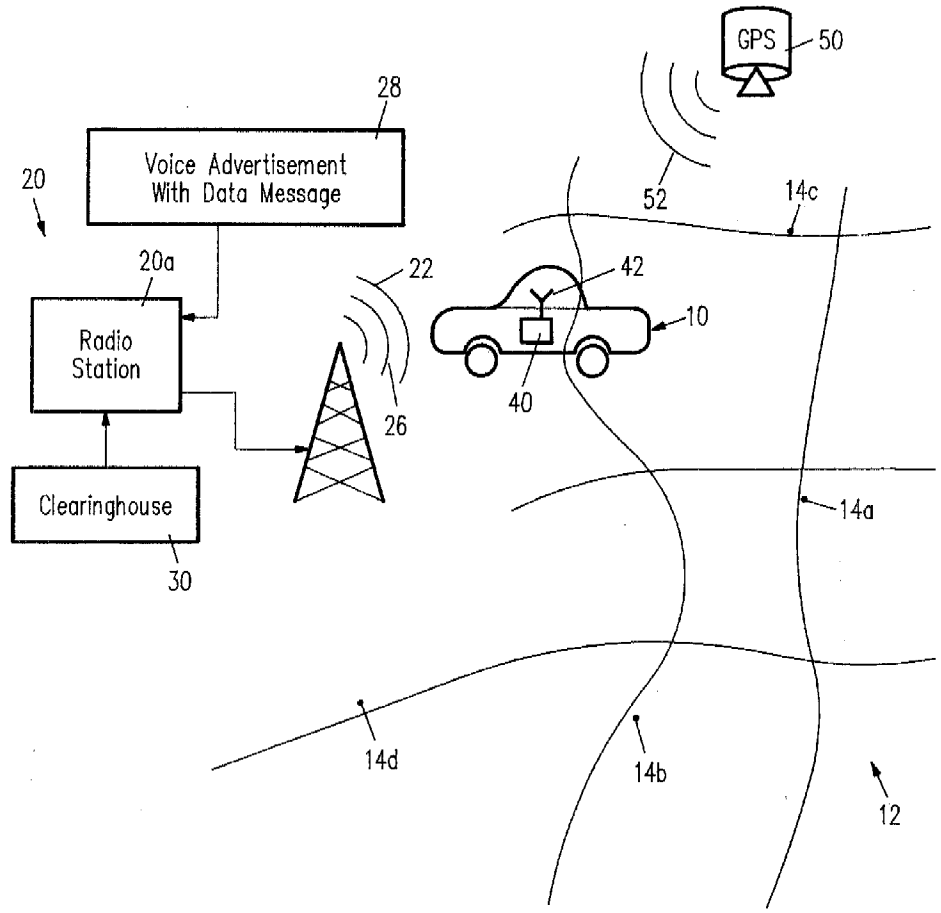


FIG. 1

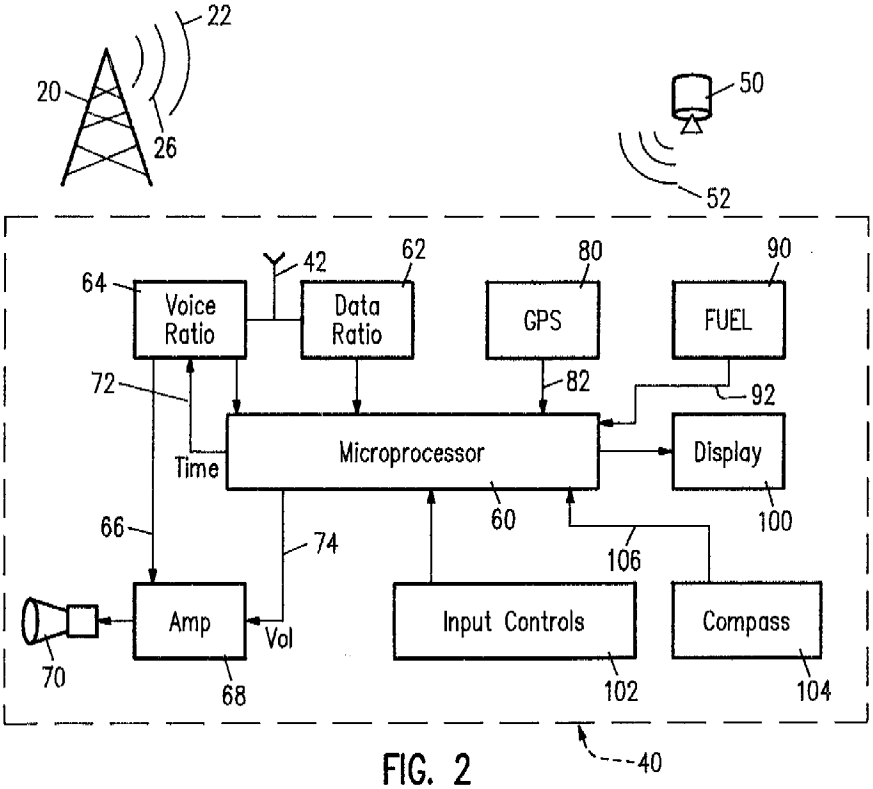


FIG. 2

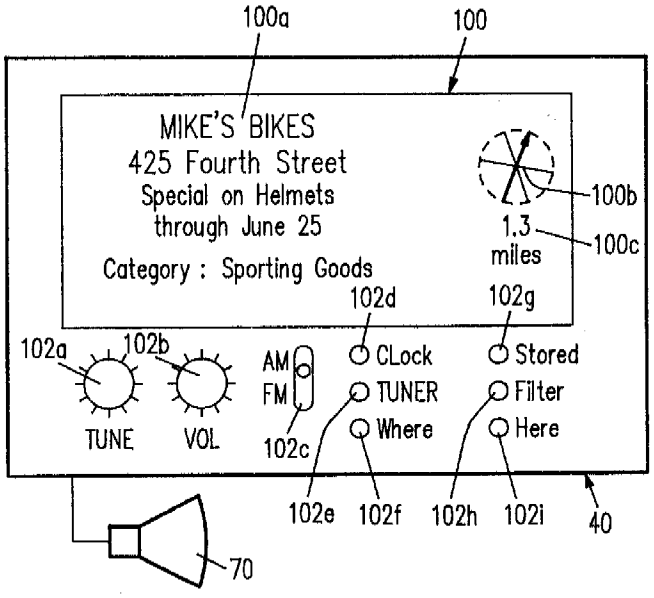


FIG. 3

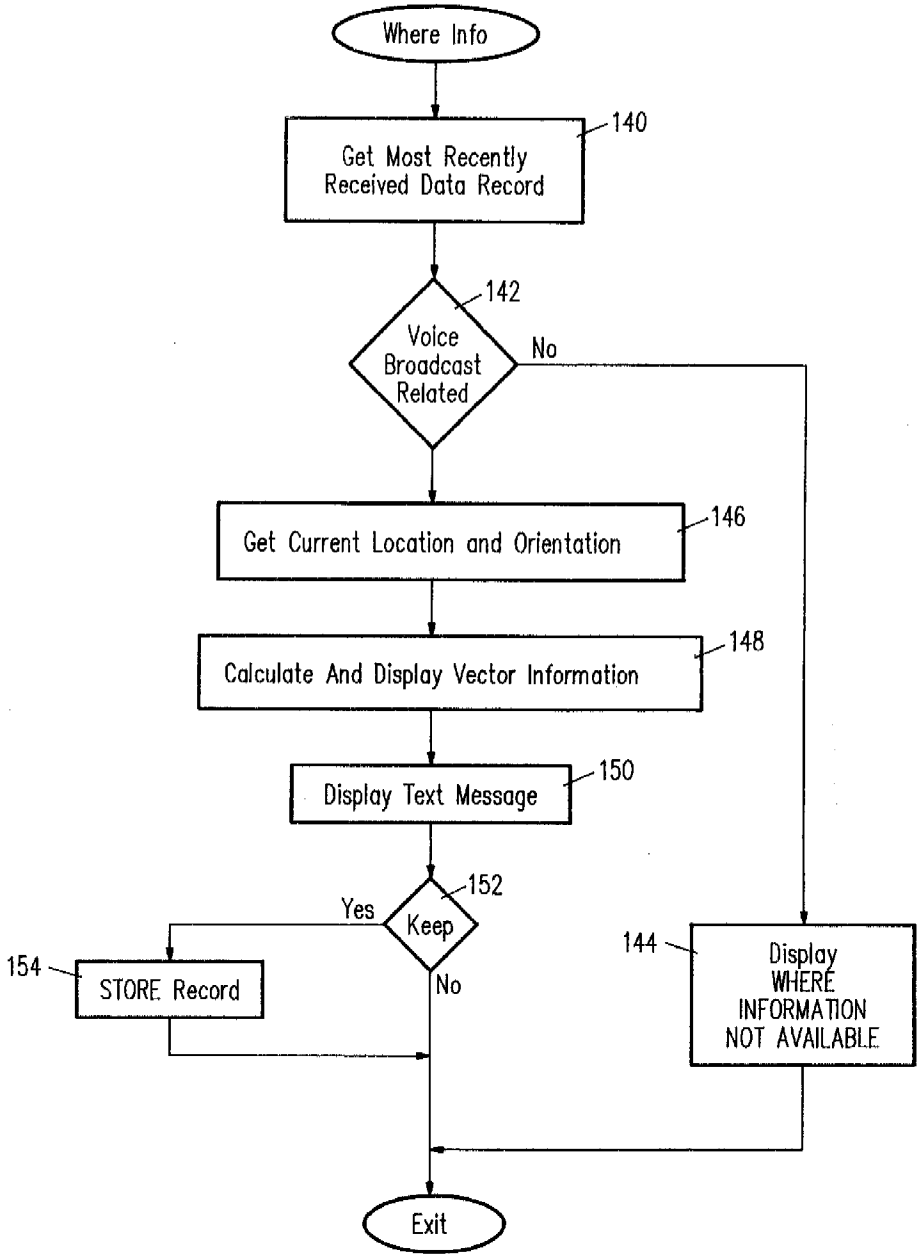


FIG. 4

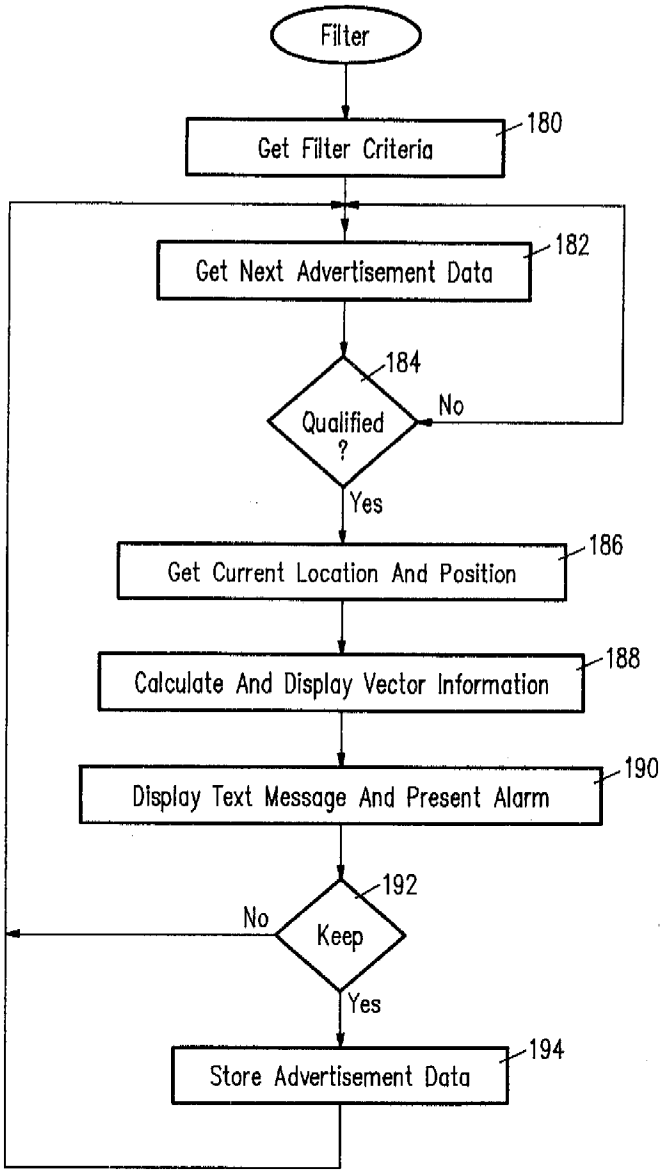


FIG. 5

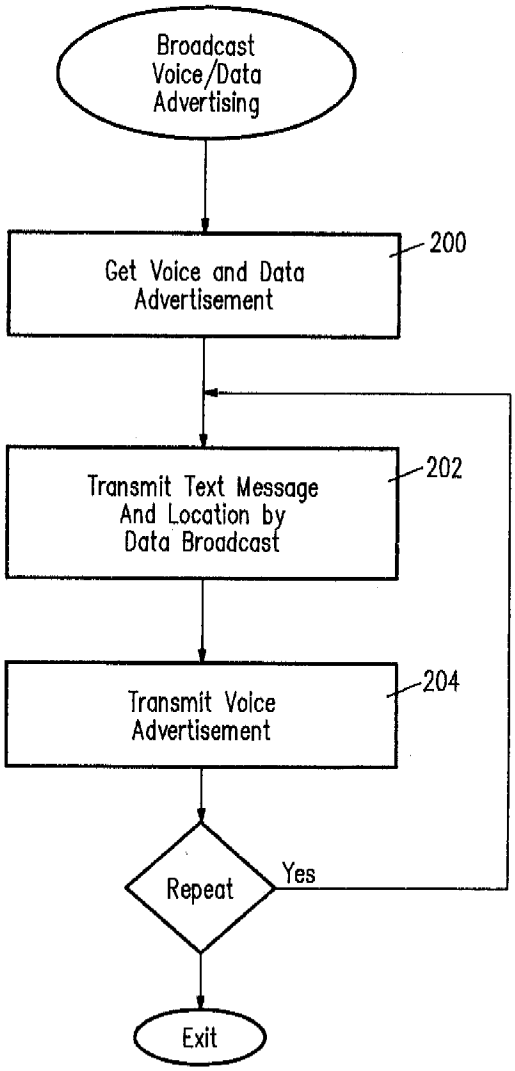


FIG. 6

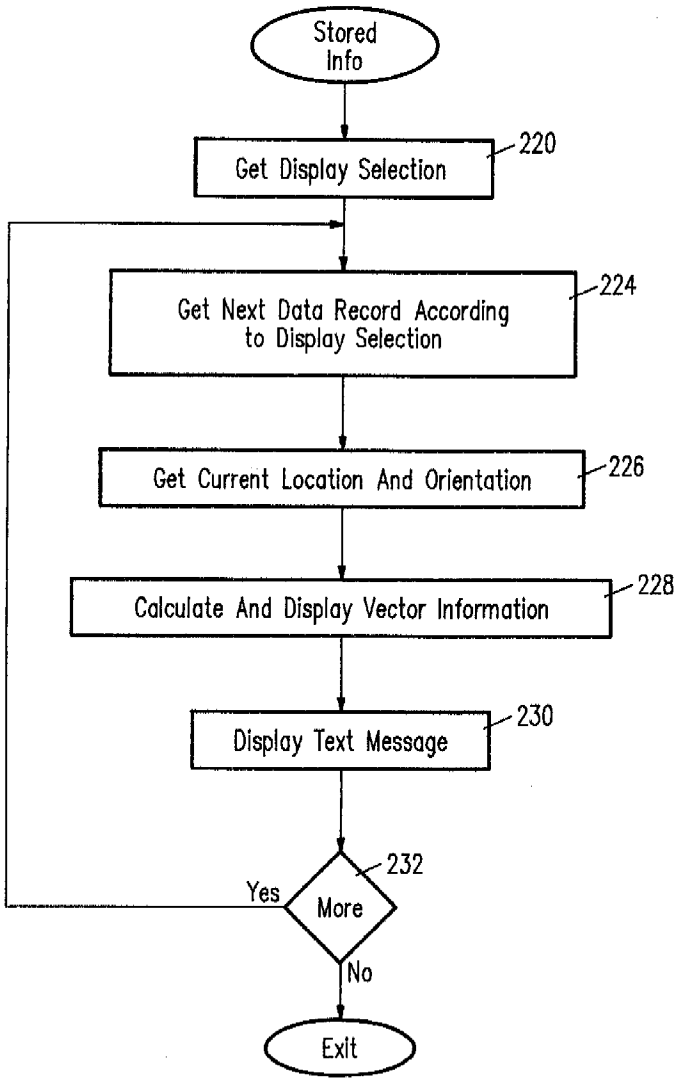


FIG. 7

PART B—ISSUE FEE TRANSMITTAL

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 2 through 6 shoud be completed where appropriate. All futher correspondence including the issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to addresses entered in Block 1 unless you direct otherwise, by: (a) specifyinga new correspondence address in Block 3 below; or (b) providing the PTO with a separate "FEE ADDRESS" for maintenance fee notifications with the payment of issue Fee or thereafter. **See reverse for Certificate of Mailing, below.**

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231.
DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

1. CORRESPONDENCE ADDRESS — 22M1/1126

ELMER GALBI
SEIKO COMMUNICATIONS SYSTEM INC
1625 N W AMBER GLEN COURT SUITE 140
BEAVERTON OR 97006

2. INVENTOR(S) ADDRESS CHANGE (Complete only if there is a change)
INVENTOR'S NAME
Street Address
City, State and Zip Code
CO-INVENTOR'S NAME
Street Address
City, State and Zip Code
☐ Check if additional changes are enclosed

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Publishing Division
JAN 17 1997
06

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT		DATE MAILED
08/583,604	01/16/96	002	BLUM, T	2202	11/26/96

First Named Applicant: PARK, MICHAL C

TITLE OF INVENTION: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 P126-PWC	342-357.000	692	UTILITY	NO	$1290.00	02/26/97

3. Correspondence address change (Complete only if there is a change)

4. For printing on the patent front page, list the names of not more than 3 registered patent attorneys or agents OR, alternatively, the name of a firm having as a member a registered attorney or agent. If no name is listed, no name will be printed.
1 Elmer Galbi
2
3

5. ASSIGNMENT DATA TO BE PRINTED ON THE PATENT (print or type)
(1) NAME OF ASSIGNEE: Seiko Communications Holding N.V.
(2) ADDRESS: (CITY & STATE OR COUNTRY) Netherlands Antilles

A. ☐ This application is NOT assigned.
☒ Assignment previously submitted to the Patent and Trademark Office.
☐ Assignment is being submitted under separate cover. Assignment should be directed to Box ASSIGNMENTS.
PLEASE NOTE: Unless an assignee is identified in Block 5, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been perviously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

6a. The following fees are enclosed:
☐ Issue Fee ☐ Advance Order - # of Copies
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☐ Any Deficiencies in Enclosed Fees

The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above.

(Authorized Signature) Elmer Galbi (Date) 1/16/1997

NOTE: The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

Certificate of Mailing

Note: If this certificate of mailing is used, it can be used to transmit the Issue Fee. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: **Box ISSUE FEE**
Assistant Commissioner for Patents
Washington, D.C. 20231

on: Jan 13, 1997 (Date)
Elmer Galbi (Name of person making deposit)
(Signature)
Jan 13, 1997 (Date)

01 FC:142 1,290.00CH
82119 561 15.00CH

1. TRANSMIT THIS FORM WITH FEE

PTO UTILITY GRANT
Paper Number 10

The United States of America

The Commissioner of Patents and Trademarks

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

Bruce Lehman

Commissioner of Patents and Trademarks

Marjorie K. Turner

Attest

Form PTO-1584 (Rev. 5/96)

(RIGHT INSIDE)

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

CHANGE OF ADDRESS/POWER OF ATTORNEY

FILE LOCATION 9200 SERIAL NUMBER 08585604 PATENT NUMBER 5627549

THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 23396

THE PRACTITIONERS OF RECORD HAVE BEEN CHANGED TO CUSTOMER # 23396

THE FEE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 23396

ON 04/12/01 THE ADDRESS OF RECORD FOR CUSTOMER NUMBER 23396 IS:

ELMER GALBI
13314 VERMEER DRIVE
LAKE OSWEGO OR 97035

AND THE PRACTITIONERS OF RECORD FOR CUSTOMER NUMBER 23396 ARE:

19761

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THIS FILE IS ASSIGNED TO GAU 2202.

CODE SHEET FOR CONTINUING DATA

Line	Code	Serial No.	Filing Date	Status	Document No.	Issue Date
104	71	282893	7/29/94	03		
105						
106						
107						
108						
109						
110						
111						
112						
113						
114						
115						
116						
117						

Condition and Status Codes for Continuing Data

CONDITION CODE

71	Continuation of Ser. No.
81	which is a continuation of Ser. No.
91	and a continuation of Ser. No.
72	Continuation-in-part of Ser. No.
82	which is a continuation-in-part of Ser. No.
75	and a continuation-in-part of Ser. No.
74	Division of Ser. No.
84	which is a division of Ser. No.
76	and a division of Ser. No.
86	, said Ser. No.
89	Ser. No.
90	and Ser. No.
92	each

STATUS CODE

01	Patent No.
03	abandoned
04	Defensive Publication No.
05	Published Application No.
06	Reissue Patent No.

NOTE I: When the codes 86 and 92 are used, they must be followed by 81, 82 or 84 -- conditions beginning with "which is"

NOTE II: Codes 71, 72 and 74 may be used only on the first line; one of them must be used on the first line.

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 1995

Application or Docket Number: 585604

CLAIMS AS FILED - PART I

(Column 1) FOR	NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE	SMALL ENTITY FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY FEE
BASIC FEE				375.00	OR		750.00
TOTAL CLAIMS	14 minus 20 =	* —	x$11=		OR	x$22=	
INDEPENDENT CLAIMS	3 minus 3 =	* —	x39=		OR	x78=	
MULTIPLE DEPENDENT CLAIM PRESENT			+125=		OR	+250=	
			TOTAL		OR	TOTAL	750

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 2	Minus	** 20	= —
Independent	* 2	Minus	*** 3	= —
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
x$11=		OR	x$22=	
x39=		OR	x78=	
+125=		OR	+250=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
x$11=		OR	x$22=	
x39=		OR	x78=	
+125=		OR	+250=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
x$11=		OR	x$22=	
x39=		OR	x78=	
+125=		OR	+250=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Form PTO 1130
(REV 2/94)

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

PACE DATA ENTRY CODING SHEET

1ST EXAMINER	258	DATE	2/5
2ND EXAMINER		DATE	

APPLICATION NUMBER	TYPE APPL	FILING DATE (MONTH / DAY / YEAR)	SPECIAL HANDLING	GROUP ART UNIT	CLASS	SHEETS OF DRAWING
08/585604	2	01/16/96		2202	342	17

TOTAL CLAIMS	INDEPENDENT CLAIMS	SMALL ENTITY?	FILING FEE	FOREIGN LICENSE	ATTORNEY DOCKET NUMBER
14	3		750	Y	P126-FWC

CONTINUITY DATA

CONT CODE	STATUS CODE	PARENT APPLICATION SERIAL NUMBER	PCT APPLICATION SERIAL NUMBER	PARENT PATENT NUMBER	PARENT FILING DATE (MONTH / DAY / YEAR)
02	2	08282893			07/29/94

PCT APPLICATION SERIAL NUMBER rows: PCT/ , PCT/ , PCT/ , PCT/ , PCT/

PCT/FOREIGN APPLICATION DATA

FOREIGN PRIORITY CLAIMED	COUNTRY CODE	PCT/FOREIGN APPLICATION SERIAL NUMBER	FOREIGN FILING DATE (MONTH / DAY / YEAR)

☆ U.S. GPO: 1995-401-429

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 1992

Application or Docket Number: 98D893

CLAIMS AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE	SMALL ENTITY FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY FEE
BASIC FEE				$355.00	OR		$710.00
TOTAL CLAIMS	10 minus 20 =	*	x$11=		OR	x$22=	
INDEPENDENT CLAIMS	3 minus 3 =	*	x 37=		OR	x 74=	
MULTIPLE DEPENDENT CLAIM PRESENT			+115=		OR	+230=	
			TOTAL		OR	TOTAL	710

* If the difference in column 1 is less then zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 3	Minus	** 20	= —
Independent	* 3	Minus	*** 3	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
x$11=		OR	x$22=	
x 37=		OR	x 74=	
+ 115=		OR	+230=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
x$11=		OR	x$22=	
x 37=		OR	x 74=	
+ 115=		OR	+ 230=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
x$11=		OR	x$22=	
x 37=		OR	x 74=	
+115=		OR	+230=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Form PTO 1130
(REV 2/94)

PACE DATA ENTRY CODING SHEET

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

1ST EXAMINER	DATE
2ND EXAMINER	DATE

APPLICATION NUMBER	TYPE APPL	FILING DATE (MONTH DAY YEAR)	SPECIAL HANDLING	GROUP ART UNIT	CLASS	SHEETS OF DRAWING
08/282893	1	07 29 94			348	7

TOTAL CLAIMS	INDEPENDENT CLAIMS	SMALL ENTITY?	FILING FEE	FOREIGN LICENSE	ATTORNEY DOCKET NUMBER
14	3		710		P126

CONTINUITY DATA

CONT CODE	STATUS CODE	PARENT APPLICATION SERIAL NUMBER	PCT APPLICATION SERIAL NUMBER	PARENT PATENT NUMBER	PARENT FILING DATE (MONTH DAY YEAR)
			PCT/		
			PCT/		
			PCT/		
			PCT/		
			PCT/		

PCT/FOREIGN APPLICATION DATA

FOREIGN PRIORITY CLAIMED	COUNTRY CODE	PCT/FOREIGN APPLICATION SERIAL NUMBER	FOREIGN FILING DATE (MONTH DAY YEAR)

☆U.S.G.P.O.: 1994 - 365-974

United States
Patent and
Trademark Office

Patent Bibliographic Data				01/04/2007 12:46 PM	
Patent Number:	5627549		**Application Number:**	08585604	
Issue Date:	05/06/1997		**Filing Date:**	01/16/1996	
Title:	DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION				
Status:	12th year fee window opens: 05/06/2008			**Entity:**	Large
Window Opens:	05/06/2008	**Surcharge Date:**	11/07/2008	**Expiration:**	N/A
Fee Amt Due:	Window not open	**Surchg Amt Due:**	Window not open	**Total Amt Due:**	Window not open
Fee Code:	1553	MAINTENANCE FEE DUE AT 11.5 YEARS			
Surcharge Fee Code:					
Most recent events (up to 7):	2004/09/22 2000/09/28	Payment of Maintenance Fee, 8th Year, Large Entity. Payment of Maintenance Fee, 4th Year, Large Entity. --- End of Maintenance History ---			
Address for fee purposes:	ELMER GALBI 13314 VERMEER DRIVE LAKE OSWEGO, OR 97035				

US005627549A

United States Patent [19]

Park

[11] Patent Number: 5,627,549

[45] Date of Patent: May 6, 1997

[54] **DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION**

[75] Inventor: **Michael C. Park**, Portland, Oreg.

[73] Assignee: **Seiko Communications Holding N.V.**, Netherlands Antilles

[21] Appl. No.: **585,604**

[22] Filed: **Jan. 16, 1996**

Related U.S. Application Data

[63] Continuation of Ser. No. 282,893, Jul. 29, 1994, abandoned.

[51] **Int. Cl.**[6] **H04B 7/185**; G01S 5/02

[52] **U.S. Cl.** **342/357**; 364/449.1; 340/996

[58] **Field of Search** 342/357; 364/449; 340/996

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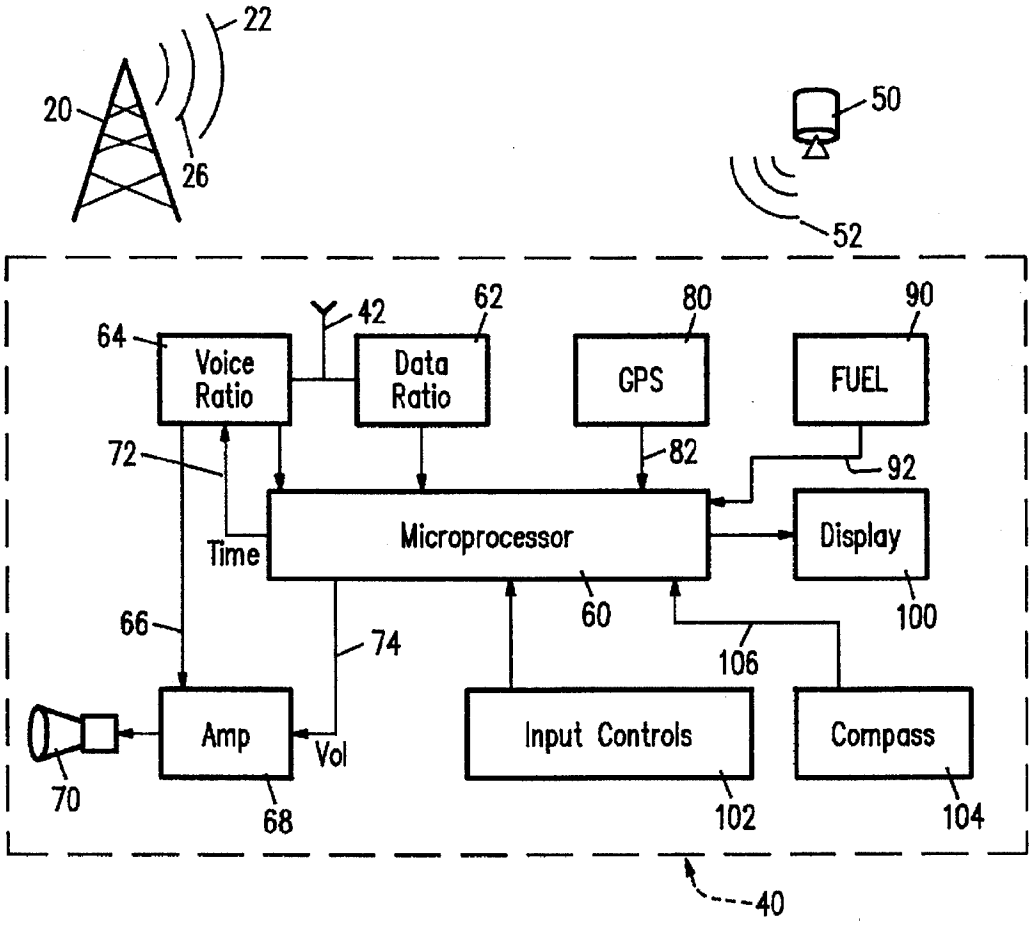
[57] **ABSTRACT**

A vehicle information device and collects information concerning specific geographic points of interest. The operator recalls for display such information, including a display showing direction and distance of travel to a designated geographic point of interest relative to a then-current vehicle location. Dual channel advertising is transmitted by voice broadcast and by data broadcast. Upon hearing in the voice broadcast an advertisement of interest, the operator captures the associated data broadcast including, among other detailed text message information, the location of the advertiser. Distance and relative direction of travel from the current vehicle location to the geographic point of interest is thereby presented. Multiple geographic points of interest are stored for selective review whereby the user constructs a database containing locations of particular interest to a particular person.

2 Claims, 6 Drawing Sheets



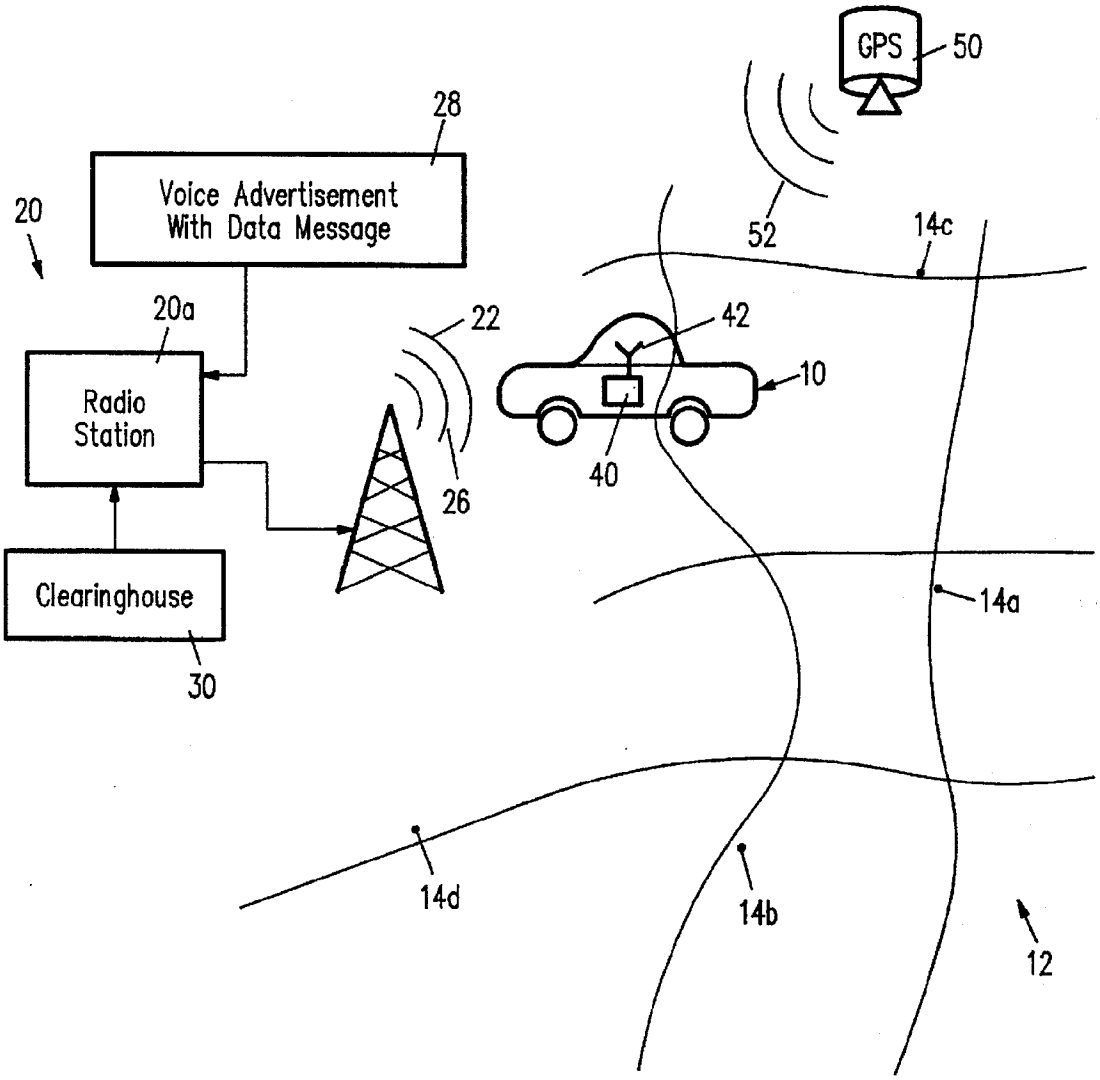

GPS
50
28
Voice Advertisement
With Data Message
20
52
14c
20a
22
42
10
Radio
Station
40
26
Clearinghouse
14a
30
14d
14b
12

FIG. 1

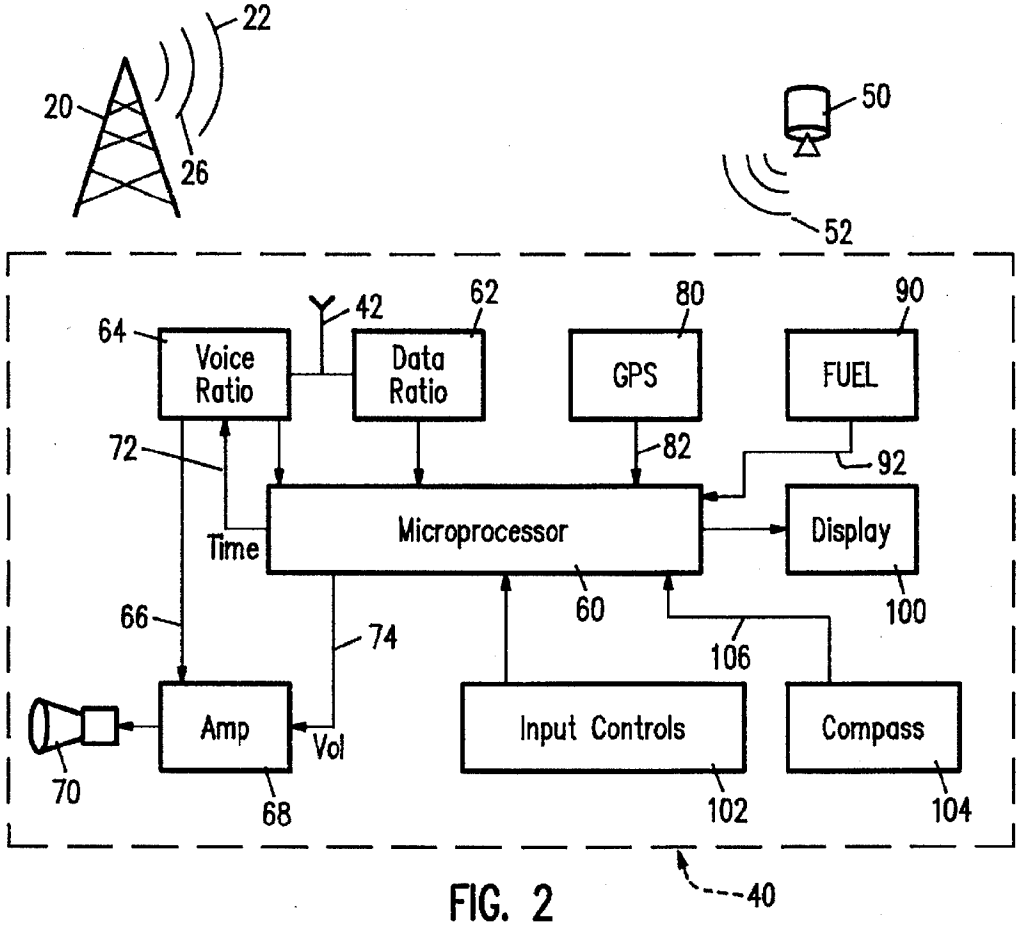

22
20
26
50
52
42
62
80
90
64
Voice Ratio
Data Ratio
GPS
FUEL
72
82
92
Time
Microprocessor
Display
66
74
60
100
106
Amp
Vol
Input Controls
Compass
70
68
102
104
40

FIG. 2

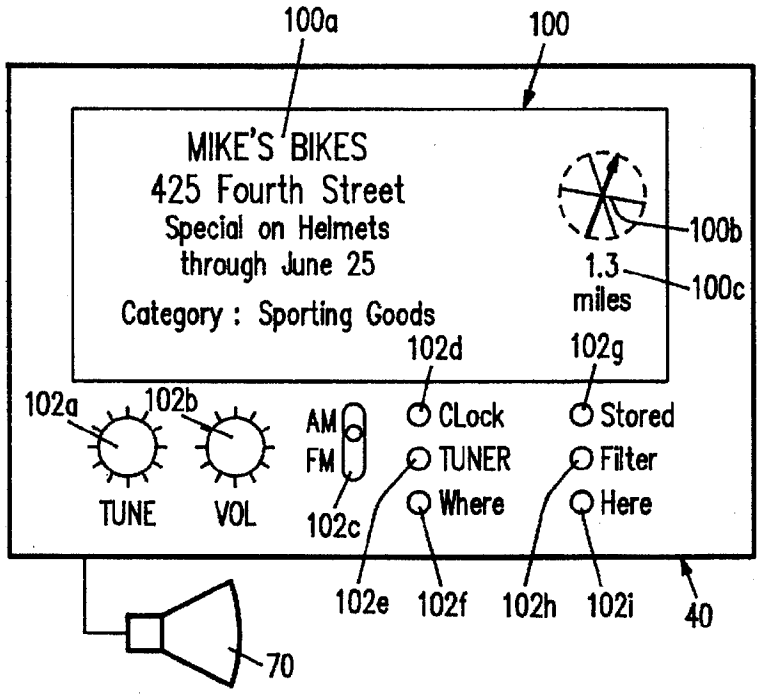

100a
100
MIKE'S BIKES
425 Fourth Street
Special on Helmets
through June 25
Category : Sporting Goods
100b
1.3
miles
100c
102d
102g
102a
102b
AM
FM
CLock
Stored
TUNER
Filter
Where
Here
TUNE
VOL
102c
102e
102f
102h
102i
40
70

FIG. 3

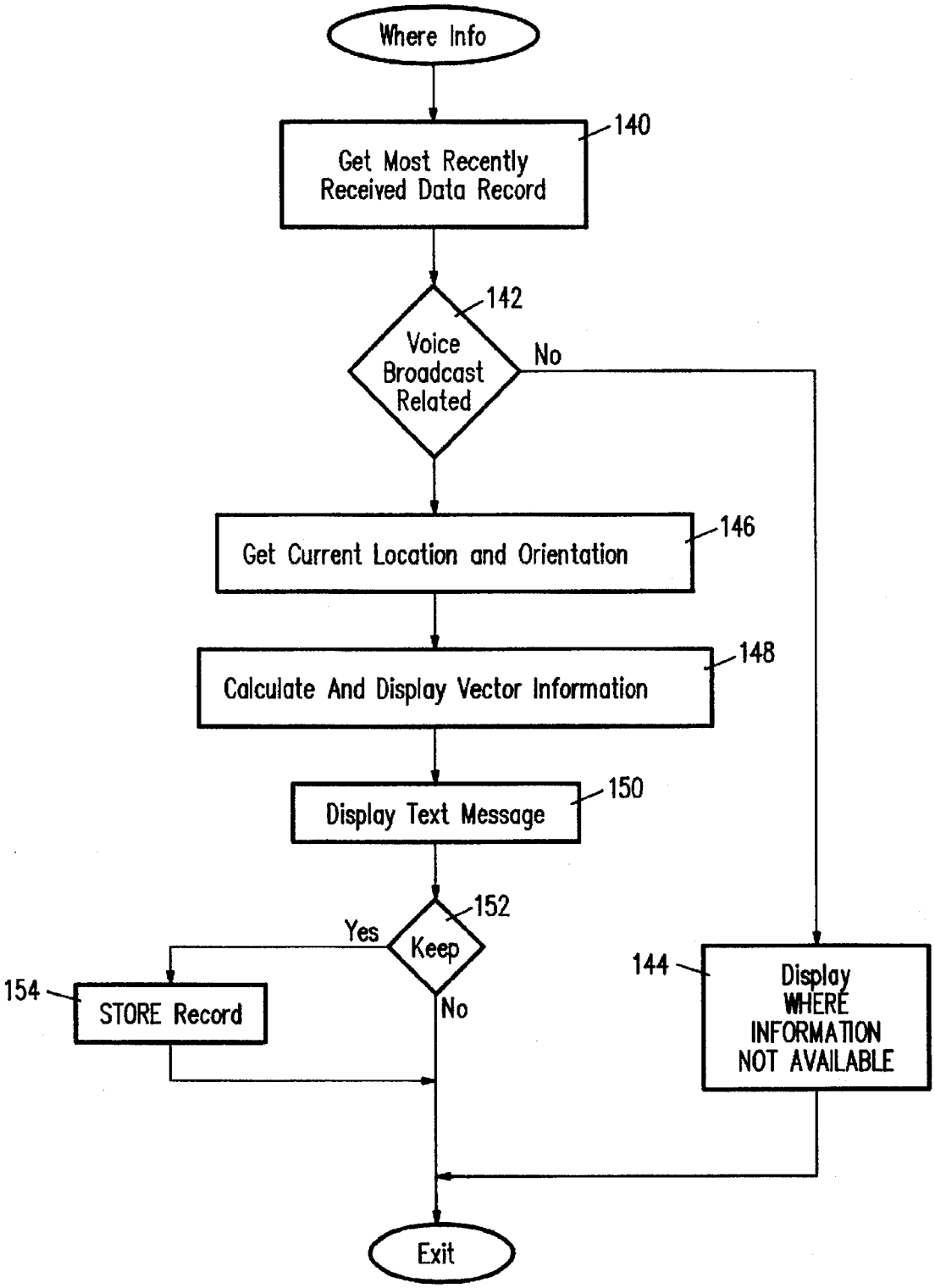

Where Info
Get Most Recently Received Data Record
140
142
Voice Broadcast Related
No
Get Current Location and Orientation
146
Calculate And Display Vector Information
148
Display Text Message
150
152
Yes
Keep
No
154
STORE Record
144
Display WHERE INFORMATION NOT AVAILABLE
Exit

FIG. 4

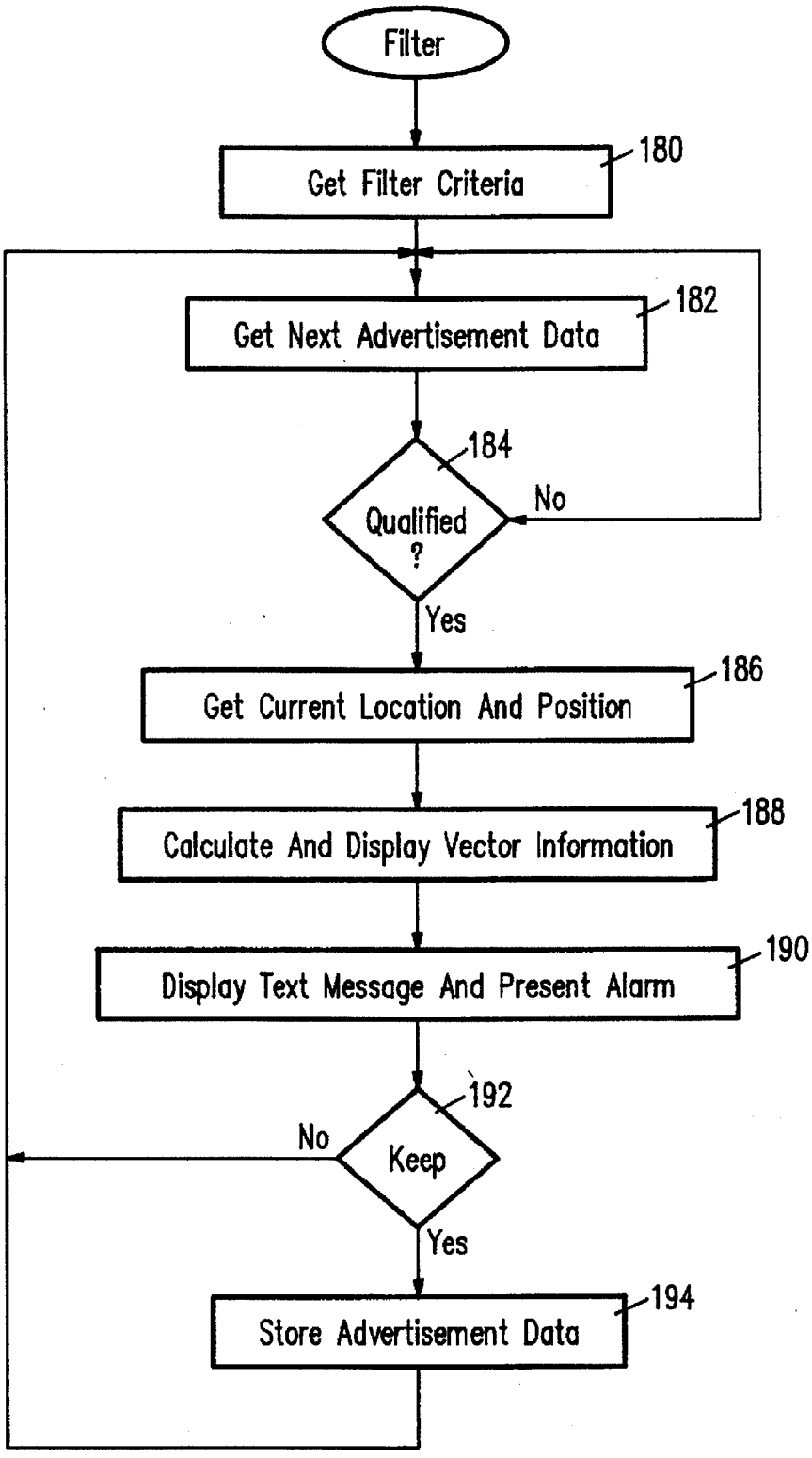

Filter
Get Filter Criteria
180
Get Next Advertisement Data
182
184
Qualified ?
No
Yes
Get Current Location And Position
186
Calculate And Display Vector Information
188
Display Text Message And Present Alarm
190
192
No
Keep
Yes
Store Advertisement Data
194

FIG. 5

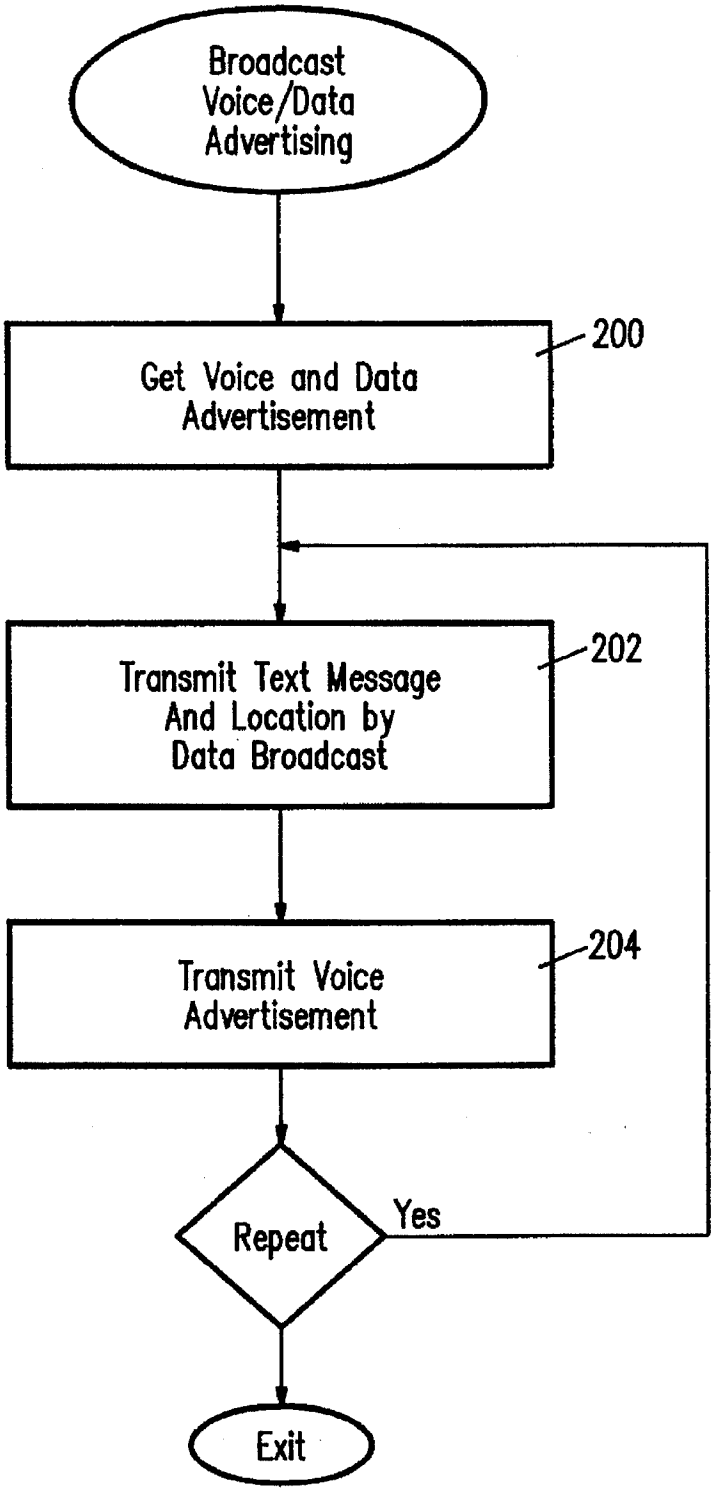

Broadcast Voice/Data Advertising
Get Voice and Data Advertisement
200
Transmit Text Message And Location by Data Broadcast
202
Transmit Voice Advertisement
204
Repeat
Yes
Exit

FIG. 6

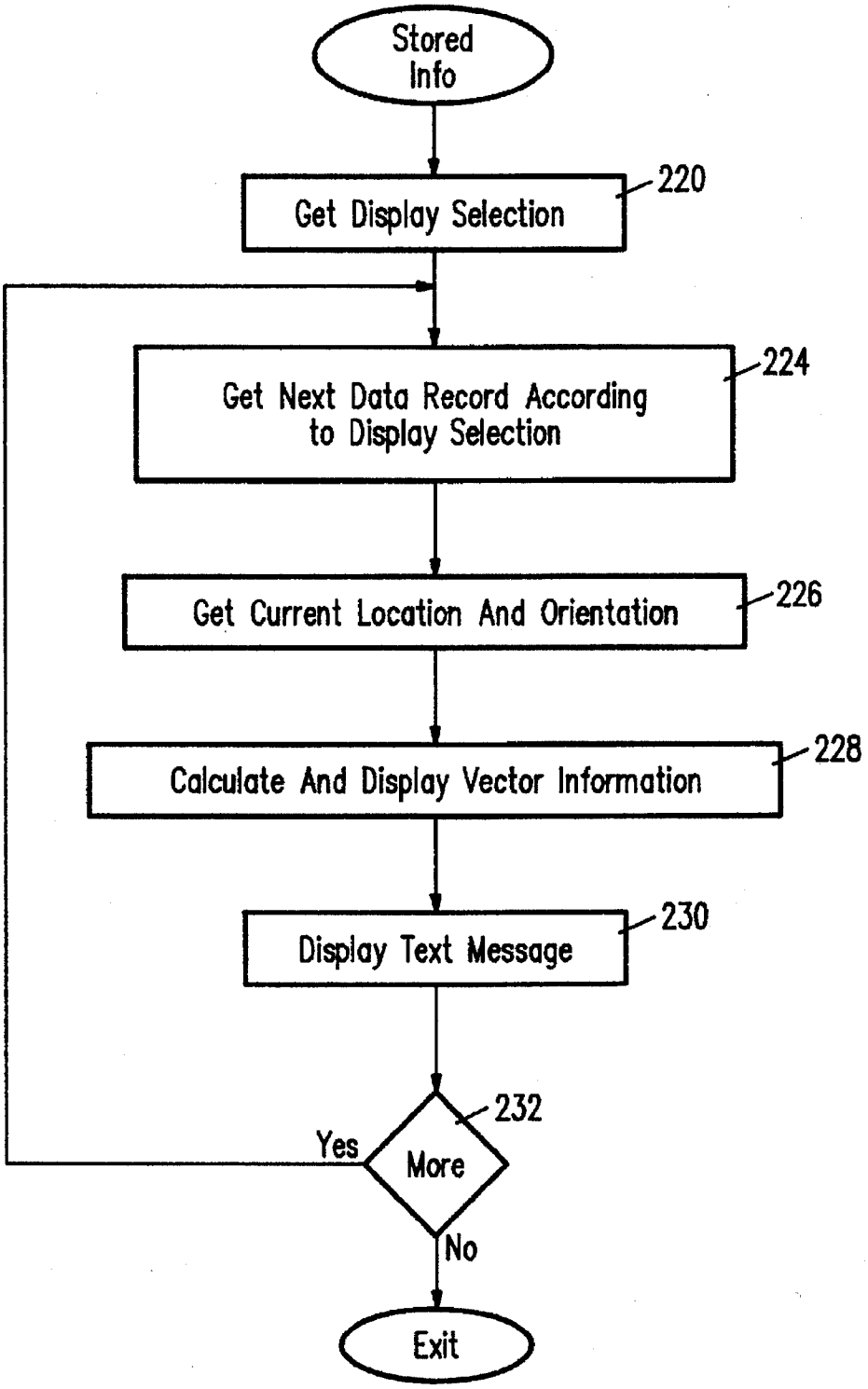

Stored Info
Get Display Selection
220
Get Next Data Record According to Display Selection
224
Get Current Location And Orientation
226
Calculate And Display Vector Information
228
Display Text Message
230
More
232
Yes
No
Exit

FIG. 7

DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

This application is a continuation of application Ser. No. 08/282,893, filed Jul. 29, 1994 which is now abandoned.

BACKGROUND OF THE INVENTION

The present invention relates generally to vehicle information systems, and particularly to vehicle information systems providing information relevant to current vehicle location.

A variety of traffic related information is now available for use in aiding vehicle travel, especially in urban road networks. A travel information device likely to be soon more commonly incorporated into vehicles is a vehicle position detecting system, e.g., the well known global positioning system (GPS) providing satellite broadcast to determine location of a receiving GPS device. Vehicles with GPS capability, therefore, have the very useful feature of tracking current vehicle position.

Given access to current vehicle location, i.e., longitude and latitude values, a proposed information system provides vehicle position relative to a map representation of a given region, e.g., a map display of city streets with vehicle position indicated by street location rather than longitude and latitude position. Thus, a digital map database further supports vehicle position display by reference to more meaningful information, i.e., by reference to a street map. To be of value, however, the digital map database must be current and comprehensive, i.e., have information relevant to wherever a vehicle may be used.

Massive digital map databases are, however, inherently expensive and difficult to include in mass produced products such as is desirable in a GPS-capable consumer product. Digital map databases require license fees, large amounts of memory, frequent and expensive revision, and generally cannot be comprehensive enough to allow use throughout the entire world. It is not economically feasible to provide in an inexpensive consumer product a digital map database covering the entire world, or at least a significant geographic region. If the device is prepared for use throughout the world, an incredibly massive digital map is required giving rise to significant cost and maintenance requirements. If only selected geographic regions are incorporated into the digital map, the device cannot be used outside such geographic regions without post-manufacture modification or manipulation of numerous storage devices, e.g., a library of CD-ROM discs.

It would be desirable, therefore, for a vehicle information device to be usable in any geographic area as manufactured yet still maintain an ability to indicate vehicle position information beyond merely longitude and latitude. In particular, people need more meaningful information than merely longitude and latitude, yet a massive digital map is difficult to justify in the context of relatively inexpensive consumer products. The need for current vehicle position is most typically a need to know current vehicle position relative to a location of interest. Unfortunately, customizing massive digital databases to provide reference to individual vehicle operator locations of interest is impractical. It would be desirable to avoid a requirement of procuring and maintaining in the travel information device a massive digital database, yet maintain an ability to reference geographic locations. The subject matter of the present invention provides such a vehicle travel information device.

SUMMARY OF THE INVENTION

In accordance with the present invention, a travel information device in a vehicle includes a vehicle position detecting device and collects vehicle position information while also collecting data relevant geographic points of interest to provide a display indicating position of a point of interest relative to a current vehicle location.

In the illustrated and preferred form of the present invention, collecting information relevant to geographic points of interest is by radio signal data broadcast in conjunction with radio signal voice broadcast, such as advertising, whereby a user interrogates a device under the present invention to collect by data broadcast detailed information concerning an advertisement of interest provided by a companion voice broadcast. The data broadcast includes precise location information providing, in conjunction with current vehicle position, a basis for presenting a display graphically showing relative position between the geographic point of interest, such as the location of an advertiser, and the current vehicle location.

According to one aspect of the present invention, storage of information relative to geographic points of interest builds for the user a personal electronic reference for later selectively displaying such information, including ability to selectively display a representation of location relative to a then current vehicle position.

The subject matter of the present invention is particularly pointed out and distinctly claimed in the concluding portion of this specification. However, both the organization and method of operation of the invention, together with further advantages and objects thereof, may be best understood by reference to the following description taken with the accompanying drawings wherein like reference characters refer to like elements.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings in which:

FIG. **1** illustrates a vehicle information system, a given road network, and a vehicle travelling within the road network and carrying a travel information device according to a preferred form of the present invention.

FIG. **2** is a block diagram of the travel information device for the vehicle of FIG. **1**.

FIG. **3** illustrates the front panel controls and display of the travel information device of FIG. **2** as viewed by the operator of the vehicle of FIG. **1**.

FIG. **4** illustrates by flow chart a first method of collecting data for storage by the travel information device wherein the user hears by voice broadcast information of interest an selects corresponding data broadcast information for storage.

FIG. **5** illustrates by flow chart an alternative method for collecting information from the data broadcast whereby the operator designates collection criteria and the travel information device automatically collects qualifying data broadcast information.

FIG. **6** illustrates by flow chart programming for a radio broadcast system coordinating or associating voice radio broadcast with data radio broadcast.

FIG. **7** illustrates by flow chart programming of the travel information device of FIG. **1** for scanning or reviewing of information stored therein.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

In FIG. 1, a vehicle **10** travels within a road network **12**. Network **12** includes main arterial roadways as illustrated, but as may be appreciated would be significantly more complex. For the present illustration, it will be understood that vehicle **10** travels throughout road network **12** along any selected travel route. Furthermore, the operator of vehicle **10** travels within road network **12** to and from geographic points of interest **14**, individually designated **14***a*–**14***d*. While only several such geographic points of interest **14** are indicated in FIG. **1**, it will be understood that any number of such geographic points of interest **14** may exist within road network **12**. Furthermore, geographic points of interest **14** for one individual vary relative to that of another individual. Accordingly, reference herein to geographic points of interest **14** shall be taken to be locations of interest to a particular person.

Also illustrated in FIG. **1**, radio broadcast system **20** provides a combined radio signal voice broadcast **22** and radio signal data broadcast **26**. While illustrated as a single radio broadcast system **20**, it will be understood that voice broadcast **22** and data broadcast **26** could originate from separate radio signal broadcast facilities. Under the preferred form of the present invention, however, voice broadcast **22** and data broadcast **26** originate from a common FM radio source as provided under the "Gaskill" paging system. The present invention may be implemented according to many paging system protocols, but as illustrated herein operates under the time-division multiplexed protocol of the Gaskill paging system, as illustrated in U.S. Pat. Nos. 4,713,808 and 4,897,835. The disclosure of U.S. Pat. Nos. 4,713,808 and 4, 897,835 are incorporated herein fully by reference thereto.

The Gaskill paging system and associated receiving devices provide an inexpensive, highly battery-efficient and highly miniaturized paging device which, under the illustrated embodiment of the present invention, constitutes a data radio signal receiver **62** (FIG. **2**) as a conduit for data broadcast **26** delivery to device **40**.

Generally the Gaskill paging system uses FM radio signal transmission facilities to broadcast within a side-band frequency paging signal data packets according to a time-division multiplexed protocol. Thus, voice broadcast **22** comprises the normal FM radio signal broadcast and data broadcast **26** represents the side-band paging system broadcast.

It will be understood, therefore, that radio broadcast system **20** provides coordinated voice and data by radio signal. In particular, radio broadcast system **20** receives voice advertisement and data message information **28**, e.g., an advertising subscription, and integrates the data message portion thereof into other incoming paging system data packets originating from a Gaskill paging system clearinghouse **30**. In this manner, radio station **20***a* coordinates or associates voice and data broadcasts **22** and **26**, respectively. As may be appreciated, however, the data message portion of information **28** could be routed through clearinghouse **30**, in which case radio station **20***a* associates a voice broadcast **22** with a data broadcast **26** originating entirely from clearinghouse **30**. Such association may be provided by a number of arrangements, but under the illustrated form of the present invention, association of voice broadcast **22** and data broadcast **26** shall be by time relation, e.g., concurrently broadcast, broadcast in close time relationship, or at given time offset.

Vehicle **10** includes a travel information device **40** receiving by way of antenna **42** the voice broadcast **22** and data broadcast **26**. Thus, device **40** receives conventional FM voice broadcasts and paging data broadcasts the Gaskill paging system protocol. In this manner, device **40** receives associated voice and data broadcasts whereby an operator of vehicle **10**, upon hearing a voice broadcast of interest, captures the associated data broadcast to collect and store within device **40** detailed information, i.e., a data record including longitude and latitude, for a geographic point of interest **14**.

FIG. **1** also illustrates a global position system (GPS) satellite **50** providing transmission **52**. Details and use of GPS transmission and the collection of such transmission to determine location of a GPS receiver are well known. Use of GPS transmission **52** under the present invention is by incorporation of a global position system receiving device into travel information device **40** collection of a current vehicle position therewith as described more fully hereafter.

Thus, travel information device **40** receives several channels of information. First, voice broadcast **22** provided by radio broadcast system **20** provides to the vehicle operator a stream of voice information potentially including reference to geographic points of interest **14**, i.e., advertisers located within road network **12**. Second, data broadcast **26**, as provided in association with voice broadcast **22**, provides further detailed text message information captured selectively by device **40**, e.g., when commanded by the operator of vehicle **10**. This establishes, among other detailed information, a precise location for a geographic point of interest **14**. Third, the global position system transmission **52** provides a current vehicle location and, therefore, a basis for presenting location of geographic points of interest **14** relative to current vehicle position.

As described more fully hereafter, device **40** maintains a database containing a collection of data records obtained from data broadcast **26**. Each data record corresponds to a geographic point of interest **14**, and device **40** displays a vector, i.e., distance and direction, indicator illustrating the relative position of a given geographic point of interest **14** relative to current vehicle location. In this manner, device **40** constructs and maintains information specific to a user of device **40**, i.e., maintains information relative to geographic points of interest **14** selected by the operator of vehicle **10**, and further provides meaningful position information beyond longitude and latitude for such points of interest **14** without reference to a massive digital map database of the road network **12**. Device **40** maintains current information relative to a given geographic region and specific to selected geographic points of interest **14**. Under one aspect of the present invention, such geographic points of interest **14** correspond generally to locations of advertisers providing, by way of radio broadcast system **20**, both voice information in broadcast **22** and detailed message or text data in broadcast **26**. This allows listeners to later reference such data and locate the corresponding geographic point of interest **14** relative to a then current vehicle position.

FIG. **2** illustrates in block diagram travel information device **40**. In FIG. **2**, a microprocessor **60** orchestrates generally operation of device **40**. Data radio signal receiver **62** couples antenna **42** to microprocessor **60**. As contemplated under the preferred form of the present invention, data radio signal receiver **62** comprises essentially a paging system receiver operating under the Gaskill paging system. Thus, the Gaskill system paging device provided as receiver **62** serves as a data terminal collecting data broadcast **26** and providing to microprocessor **60** detailed information asso-

ciated with, for example, an associated voice advertisement broadcast in voice broadcast **22**. A voice radio receiver **64**, also coupled to antenna **42**, receives the voice broadcast **22** and delivers a voice signal **66** to an amplifier **68** driving a speaker **70**. Microprocessor **60** tunes voice radio receiver **64** by way of a tune control **72**. Thus, microprocessor **60** selects a radio signal voice broadcast **22** by tune control **72** and, by way of volume control **74** applied to amplifier **68**, causes presentation of the corresponding voice broadcast on speaker **70**.

A global position system receiver **80** receives the transmission **52** from global position system satellite **50** and delivers to microprocessor **60** a current vehicle location **82**. In this manner, microprocessor **60** requests from global position system radio receiver **80** a current vehicle location and receives in return the current vehicle location **82**.

Microprocessor **60** receives other vehicle information. For example, a fuel gauge sensor **90** provides a fuel remaining input **92** to microprocessor **60**.

Microprocessor **60** drives a display **100**. Display **100** presents, for example, tuning and station selection information relative to the voice radio receiver **60** to provide an FM radio capability wherein the operator of vehicle **10** manipulates input controls **102**, i.e., volume, station select, and other controls described more fully hereafter, to listen to a selected voice broadcast **22**. Display **100** further presents, as described more fully hereafter, data relevant to stored geographic points of interest **14** and also graphic indication, i.e., a vector indicating distance and direction, of a selected geographic point of interest **14** relative to the current vehicle location.

A compass **104** provides a vehicle orientation input **106** to microprocessor **60**. Device **40** uses the current vehicle position, i.e., as provided by vehicle location **82**, and also the current vehicle orientation, as provided by input **106**, to calculate a graphic indication, i.e., a display vector orientation, indicating direction of travel for a geographic point of interest **14** relative to the current vehicle position. To portray on display **100** the relative direction, i.e., toward the geographic point of interest, current vehicle orientation is considered. Thus, calculation and display of a vector on display **100** begins with calculation of distance between two points designated by longitude and latitude values, i.e., distance between the current vehicle location and the geographic point of interest **14**, and calculation of an angle of orientation for a direction of travel. In other words, display **100** has a fixed relationship relative to vehicle **10** and vehicle orientation input **106** supports an accurate display of a direction of travel as presented by vector icon on display **100**. Furthermore, the display presented may be updated as vehicle **10** moves and the distance between vehicle **10** and the geographic point of interest **14** changes and also as vehicle orientation changes.

FIG. **3** illustrates a front view of the travel information device **40** monitoring the combined voice and data broadcasts **22** and **26** and global positioning system broadcast **52**. FIG. **3** also illustrates display **100** and input controls **102**. Input controls **102** include a tune dial **102***a*, a volume dial **102***b* and an AM/FM switch **102***c*. As may be appreciated, device **40** operates, from a user perspective, in part as a conventional car radio. The user manipulates input controls **102***a*–**102***c* to listen to a voice broadcast **22** on speakers **70**. Additional control inputs **102** for device **40** include a clock button **102***d*, a tuner button **102***e*, a where information button **102***f*, a stored information button **102***g*, a filter button **102***h*, and a here button **102***i*. Use of input controls **102***d*–**102***i* will be explained more fully hereafter, but generally provide to the user various display presentations relative to display **100** and modes of operation for device **40**.

As illustrated in FIG. **3**, display **100** presents a text message display portion **100***a* showing information such as vendor name, address, and current marketing information, for example, a sale or promotional activity including a date of availability for the promotional activity. Display portion **100***a* further presents a category of vendor, e.g., sporting goods. As may be appreciated, the data records obtained from data broadcast **26** and stored in device **40** include a variety of fields as indicated generally by the display portion **100***a* in FIG. **3**. In such form, information maintained in device **40** may be manipulated in the manner of a database, e.g., searching, sorting, and other such database record management functions.

Display **100** further provides a vector angle portion **100***b* and a vector distance-to-travel portion **100***c*. As described herein above, angle portion **100***b* indicates the relative orientation of a direction of travel from the current vehicle location to a selected geographic point of interest **14**. Distance-to-travel portion **100***c* represents the distance separating the current vehicle location and the geographic point of interest. The angular orientation of portion **100***b* desirable takes into account the current vehicle **10** orientation input **106** as provided by compass **104**. Presentation of vector angle portion **100***b* should, therefore, indicate generally a direction of travel considering the viewer's perspective, i.e., looking at display **100** from within vehicle **10**, to indicate appropriately the relative orientation of a direct line-of-sight or direction-of-travel from the current vehicle position to the geographic point of interest **14**.

Clock button **102***d*, when pressed, causes presentation by microprocessor **60** on display **100** the current time of day. Tuner button **102***e*, when pressed, causes presentation on display **100** by microprocessor **60** information relevant to tuning voice broadcast radio **64**, e.g., frequency of station currently tuned, preset features available, and any other information normally displayed in connection with operation of a voice broadcast radio.

Where information button **102***f*, when pressed, indicates to microprocessor **60** operator desire to collect information from data broadcast **26**. For example, voice broadcast **22** and data broadcast **26** are synchronized broadcasts and the operator of device **40** hears an advertisement of interest provided by way of voice broadcast **22** and presses the where information button **102***f* for further information. Microprocessor **60** then collects a data record, i.e., text message information relative to the advertisement of interest, by way of data broadcast **26** and data receiver **62**. Text message information presented in display portion **100***a* is obtained, therefore, by the operator activating the where information button **102***f* during or just after a voice broadcast advertisement of interest.

Device **40** holds multiple data records, i.e., one for each geographic point of interest **14**. Stored information button **102***g* allows scanning through such stored data records and selective display of the previously stored data record for a geographic point of interest **14**. In this manner, the user of device **40** constructs a personal electronic reference tracking travel information including data records for particular geographic points of interest **14**, i.e., data records selected by and of interest to a particular user. The user thereby builds a personalized and current database of geographic points of interest **14**.

Filter button **102***h* drives device **40** into an automatic data collection mode according to user selected filter criteria. For

example, device **40** monitors the stream of data provided in data broadcast **22** and compares location information therein to the current vehicle location to collect all references within a given distance of current vehicle location. Additionally, the user establishes a category of interest, e.g., auto parts advertisements, grocery store advertisements, sporting goods or restaurant advertisements, to further filter information available in data broadcast **22**. In this manner, the user of device **40** creates automatically a customized database by designating geographic points of interest **14** according to user-selected criteria.

The here button **102***i* provides another method of creating a data record concerning a geographic point of interest **14** within device **40**, in this case one corresponding to current vehicle location. The operator presses here button **102***i* and creates a geographic point of interest **14** data record corresponding to current vehicle location. This allows the user to begin at a given location, operate here button **102***i*, and have ability to reference that given location later while travelling, e.g., to return to that given location or to have directional indication of that given location from another vehicle location. The data record created by device **40** in response to the here button **102***i* includes at least the longitude and latitude information corresponding to the vehicle position at the time of button **102***i* activation. Additional textual information can be entered by the user if desired, e.g., textual information entered by operation of control inputs **102** in response to supporting prompts presented on display **100**. For example, the user may wish to name a location in conjunction with activating the here button **102***i* for meaningful later reference thereto.

FIG. **4** illustrates programming of microprocessor **60** for information collection from data broadcast **26**, i.e., in this case in response to activation of where information button **102***f*. In FIG. **4**, it will be assumed that voice broadcast **22** and data broadcast **26** are associated by simultaneous broadcast. As may be appreciated, other association methods may be employed and incorporated into the illustrated embodiment of the present invention. Processing in response to user activation of the where information button **102***f* begins in block **140** where microprocessor **60** collects the most recently received data record of data broadcast **26**. As shown in the present embodiment, voice broadcast **22** and data broadcast **26** are associated by simultaneous presentation and microprocessor **60** need only collect in response to activation of the where information button **102***f* the current presented or most recently presented data record in data broadcast **26**. In anticipation of such task, microprocessor **60** always collects in an input buffer (not shown) each data record presented in data broadcast **26**. For each new data record presented, the old, previous data record is replaced in the input buffer. Thus, when the operator activates where information button **102***f*, the input buffer holds, or will soon hold, a complete data record taken from data broadcast **26** and associated with the current voice broadcast **22** presentation. Thus, processing in block **140** implements a method of association between voice broadcast **22** and data broadcast **26**.

Decision block **142** determines whether the current voice broadcast **22** is related to the most recently received data record. For example, not every voice broadcast **22** presentation, e.g., advertisement, will have an associated data record available in data broadcast **26**. For example, if the data record most recently received by way of data broadcast **26** is "stale" then it should not be taken as related to the current voice broadcast **22** presentation. In such case, processing branches through block **144** where device **40** presents on display **100** the message "where information not available" and processing terminates. If, however, the data record most recently received is related to the voice broadcast **22** presentation, i.e., not "stale", then processing advances to block **146** where microprocessor **60** obtains the current vehicle location and vehicle orientation. As may be appreciated, determining whether a given data record is "stale" may be implemented by time-stamping data records held in the input buffer. The length of time required to become "stale" in the input buffer is variable and a function of how quickly the operator of vehicle **10** must activate the where information button **102***f*.

Microprocessor **60** then calculates in block **148** the angle portion **100***b* and distance-to-travel portion **100***c*. In other words, microprocessor **60** calculates and angle of orientation for the arrow icon presented in portion **100***b* using the current vehicle orientation **106** and the direction of travel toward the subject geographic point of interest **14**. Microprocessor **60** then calculates the distance-to-travel value for portion **100***c* as the separation between the current vehicle position and subject geographic point of interest **14**.

As may be appreciated, a timer interrupt may also be set to itteratively execute procedures updating the display portions **100***b* and **100***c* as the vehicle changes orientation and location relative to the geographic point of interest **14** associated with the current data record. Furthermore, microprocessor **60** may take into account fuel remaining input **92** in comparison to expected vehicle **10** mileage and consider separation between current vehicle position and the subject geographic point of interest **14**. If vehicle **10** holds insufficient fuel to make the trip to the subject geographic point of interest, an appropriate display may be presented to indicate such condition to the vehicle operator.

Continuing to block **150**, microprocessor **60** presents in display portion **100***a* the text message portion of the current data record, e.g., vendor name, address, phone number, and any other special promotional information provided. In decision block **152**, the operator has opportunity to keep for permanent storage the current data record, in which case processing branches through block **154** where the current data record is stored for later reference, i.e., by operation of the stored information button **102***g*. Otherwise, processing exits directly from decision block **152**.

FIG. **5** illustrates by flow chart an alternative method for gathering information from the data broadcast **22**, i.e., gathering information automatically according to user-designated criteria in response to filter button **102***h*. In this manner, the operator need not monitor voice broadcast **22** to collect information of potential interest by way of data broadcast **26**.

In FIG. **5**, processing begins in block **180** where microprocessor **60** obtains, from the user, appropriate filtering criteria. For example, user interaction is conducted by way of display **100** and alternate functions defined for control inputs **102** to collect from the user a designation of filter criteria. For example, the user may be interested in all data records broadcast and being associated with a location within a given distance of current vehicle location. In this manner, the user collects advertising information for vendors in close and convenient proximity to current vehicle location. Also, data records are classified according to category, and the user designates as qualifying under user criteria certain categories of information. For example, the user may be interested in certain types of products or services advertised and having associated data records in data broadcast **22**. In any event, block **180** represents user

designation of criteria applied to data records appearing in data broadcast **22**, i.e., which of those data records will be accepted and stored by device **40** for later reference by operation of the stored information button **102***g*.

Continuing to block **182**, microprocessor **60** gets the next data record provided in data broadcast **22** and, in decision block **184**, applies the user-designated criteria. If the data record collected in block **182** meets the user-designated criteria provided in block **180**, then processing advances to block **186**. Otherwise, processing returns to block **182** from decision block **184** to collect the next data record appearing in data broadcast **26**. In block **186**, microprocessor **60** obtains the current vehicle position and orientation. Continuing to block **188**, microprocessor **60** calculates and displays the arrow icon at appropriate angle of orientation and the distance-to-travel value in display portions **100***b* and **100***c*, respectively.

Then, in block **190**, microprocessor **60** displays the text message data available in the collected data record. An alarm presented in block **190** indicates to the user collection of a data record potentially of interest, i.e., satisfying the user-designated criteria provided in block **180**. Decision block **192** allows the user opportunity to discard or keep for permanent storage the data record just collected. Accordingly, if the user declines storage of the just-collected data record then processing returns immediately to block **182**. Otherwise, processing advances through block **194** where the just-collected data record is stored for later reference by operation of the stored information button **102***g*. Processing then returns from block **194** to block **182** for collection of a next data record.

As may be appreciated, an exit procedure (not shown) interrupts the data record collection loop represented by flow chart in FIG. **5**. For example, the user may wish to terminate collection or may wish to modify the designation of data record collection criteria in block **180**. Furthermore, processing at decision block **192** need not forego collection of additional data records in data broadcast **26**. In other words, additional records may be queued for review by the operator even though microprocessor **60** is awaiting input at decision block **192**. Also, should the operator not respond immediately at decision block **192**, a time-out feature allows processing to advance without requiring user input, e.g., accepts for storage the data record qualifying under the user designated criteria and allows the user to later delete the record from device **40**.

FIG. **6** illustrates by flow chart processing conducted by the radio broadcast system **20** in providing associated voice broadcast **22** and data broadcast **26**. In FIG. **6**, processing begins in block **200** where radio broadcast system **20** receives an advertising subscription including both voice advertising for presentation in the voice broadcast **22** and message information for presentation in the data broadcast **26**. As noted herein above, association between the voice advertisement and message data is by simultaneous broadcast. Thus, system **20** transmits in block **202** the text message information and location information in data broadcast **26** followed by transmission of the voice presentation in voice broadcast **22**. As may be appreciated, processing in blocks **202** and **204** repeats intermittently, i.e., according to how often and when the dual channel advertisement is to be broadcast.

FIG. **7** illustrates programming for microprocessor **60** in response to activation of the stored information button **102***g*. In FIG. **7**, processing begins in block **220** where microprocessor **60** presents opportunity for the user to scan stored data records according to a given criteria, i.e., get a display selection from the user of device **40**. For example, the user wishes to display data records according to a certain sequence or to display only records meeting a certain criteria, e.g., restaurant advertisements. Having obtained a display selection from the user, processing advances to block **224** where microprocessor **60** gets a next data record according to the user-designated display selection. Continuing to block **226**, microprocessor **60** obtains the current vehicle position and orientation. Then, in block **228**, microprocessor **60** calculates and presents display portions **100***b* and **100***c*, i.e., displays vector information indicating the distance and relative orientation to a geographic point of interest **14** corresponding to the data record currently presented. Continuing to block **230**, microprocessor **60** displays at display portion **100***a* the text portion of the data record for review by the user. Decision block **232** provides the user opportunity to terminate scanning of stored information in which case processing exits from decision block **232**. If the user continues scanning through the scored data records according to the designated display selection, then processing returns from decision block **232** to block **224** where a next data record in the sequence is selected for review by the user.

Important to note, as the user scans through stored data records and obtains a presentation on display **100**, the then-current vehicle orientation and location are referenced to present a then-current relative position in display portions **100***b* and **100***c*, i.e., the current relative direction of travel and distance to the geographic point of interest **14** associated with the data record currently displayed by device **40**. Also, processing illustrated in FIG. **7** initiates a timer interrupt procedure updating display portions **100***b* and **100***c* as the vehicle orientation and location relative to the currently displayed geographic point of interest **14** changes.

The scanning procedure illustrated in FIG. **7** may, as will be appreciated, be augmented to include additional features such as deleting data records, sorting on various fields of the text message portion, and applying additional category values whereby the user may better manage a collection of information maintained in device **40** and relevant to travel of vehicle **10** to and from geographic points of interest **14**.

Thus, an improved vehicle information device and method of operation have been shown and described. Under the present invention, a user builds a customized database containing geographic points of interest, including precise longitude and latitude information and ability to provide distance and orientation of travel toward the geographic point of interest and in relation to the current vehicle location. In this manner, the user obtains useful information by way of radio signal without requiring reference to a massive digital database of the surrounding geographic area. Information obtained by radio signal is always current, i.e., replaced by subsequent broadcast. In this manner, the operator maintains a dynamic and up-to-date database of specific geographic points of interest.

It will be appreciated, that the present invention is not restricted to the particular embodiment or embodiments that have been described and illustrated herein, and that variations may be made therein without departing from the scope of the invention as found in the appended claims and equivalents thereof.

What is claimed is:

1. A method for providing specific time and location sensitive advertising information to a moving vehicle, said specific time and location sensitive advertising information being selected from a large body of advertising information

including a large number of records, each record including a specific time and location sensitive advertising information, the method comprising the steps:

transmitting to said vehicle by radio time said large body of advertising information,

receiving at said vehicle said large body of advertising information;

at a specific time, determining the location of said vehicle; and

selecting for display at said vehicle one of said records for display, said selection being at least in part based on the time of day and upon the location of said vehicle.

2. A method of providing time and location sensitive advertising information to the operator of a moving vehicle, the method comprising the steps:

receiving multiple data records by radio signal, each data record containing time of day information and location sensitive advertising information;

storing said data records;

calculating current location for said vehicle; and

selecting for display one of said records containing time of day information and location specific advertising information depending upon the time of day information and the location of said vehicle;

displaying said selected record containing time of day information and location specific advertising information.

* * * * *

PATENT
5863-00203

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No. 10/772,071
Confirmation No. 1712

I hereby certify that this correspondence is being transmitted to the United States Patent & Trademark Office via electronic submission or facsimile on the date indicated below:

2/20/2007 /Pamela Gerik/
Date Pamela Gerik

DECLARATION OF C. J. HEBERT UNDER 37 C.F.R. § 1.132 REGARDING DIMITRIADIS ET AL.

I, C. J. Hebert, hereby declare and state that:

1. I am employed by Sigma Information Group and provide information technology support to a number of companies and law firms. I have been asked to review a Macintosh LC III computer and the Declaration of Charles D. Huston February 17, 2005, including the Exhibits ("Huston 2.17.05 Declaration"). I personally reviewed the Macintosh LC III computer and verify the following as facts. I personally observed the "Get Info" results discussed below, but was unable to print the screen.

2. Exhibit A attached to the Huston 2.17.05 Declaration is a true copy of a screen printout of the Macintosh computer (LC III). The "Get Info" function of the Macintosh reveals that the first drafts of the "Ad Specification," "Ad Claims," and "Ad Abstract" were all created August 13, 1994.

3. Attached as part of Exhibit A to the Huston 2.17.05 Declaration are photographs of the screen showing the "Get Info" results. The five photographs of Exhibit A are hard to read, but the screen clearly shows the "Ad Specification" document was created August 13, 1994. ~~The "AD CIP" file was created August 13, 1994.~~

4. Exhibit B to the Huston 2.17.05 Declaration are the printouts of the "Ad Abstract" and the "Ad Claims" listed in the screen printout of Exhibit A. These documents were created August 13, 1994 as demonstrated by the "Get Info" function (*see* Exhibit A) and also by the settings in WORD. The "Ad Specification" was also created August 13, 1994.

5. Exhibit C to the Huston 2.17.05 Declaration is a true copy of a screen printout of the Macintosh computer (LC III) and shows the "last modified" dates for the document "Ad Drawings." Various figures in the "Ad Drawings" file were created prior to October 11, 1994. The "Get Info" function of the Macintosh reveals that Figures 1, 8 and 9 were created before October 11, 1994. Figure 1 (attached as part of Exhibit C) was created before July 1, 1994 and was "last modified" August 14, 1994, as shown in Exhibit C.

6. I declare that all statements made herein of my own knowledge are true, and that all statements of my own belief are believed to be true, and further that these statements were made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under the United States Code, Title 18 § 1001, and that such willful false statements may jeopardize the validity of the patent, and any reexamination certificate issuing thereon.

1-29-07
Date

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Huston et al.

Serial No. 10/772,071

Filed: February 4, 2004

For: METHOD AND APPARATUS FOR MESSAGE DISPLAY ON A GOLF COURSE

§ Group Art Unit: 2681
§ Examiner: Gregory C. Issing
§
§ Atty. Dkt. No. 5863-00203
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I hereby certify that this correspondence is being transmitted via facsimile or deposited with the U.S. Postal Service with sufficient postage as First-Class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313, on the date indicated below.

2/17/05
Date

Pamela Gerik
Pamela Gerik

DECLARATION OF CHARLES D. HUSTON UNDER 37 C.F.R. § 1.131 REGARDING DIMITRIADIS ET AL.

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

I, Charles D. Huston, hereby declare and state that:

1. I am a named inventor in the above-identified patent application, which is U.S. Patent Application No. 08/926,293, filed on Sept 5, 1997, which is a continuation of U.S. Patent Application No. 08/366,994 filed December 30, 1994 which is a continuation in part of U.S. Patent Application No. 08/313,718 filed Sept 22, 1994, which in turn is a continuation in part of U.S. Patent Application No. 07/804,368 (U.S. Pat. No. 5,314,093) filed December 10, 1991.

2. In the present application, certain claims have been rejected in reference to U.S. Patent No. 5,664,948 to Dimitriadis et al., which issued on Sept 9, 1997 and was filed on October 11, 1994. The '948 patent also claims priority from U.S. Pat. Nos. 08/282,893 and 08/283,276 both filed on July 29, 1994, but the subject matter cited by the Examiner in this case appears to have been first presented October 11, 1994.

3. In the present application, certain claims have been rejected based on certain subject matter of Dimitriadis et al, namely: "Dimitriadis et al teach the conventionality of providing both position and condition-based advertisement message presentation wherein a GPS-determined position (80) and optionally a condition (440b), is compared to a database resource 90 having advertisement messages correlated with advertisement locations/and/or times . . ." The effective date of this subject matter appears to be October 11, 1994.

4. As supported below, I, along with Darryl Cornish, conceived of the subject matter claimed in the present application within the United States before October 11, 1994. The subject matter includes an apparatus and method of displaying messages to a golfer based on location or activity of the golfer. One embodiment of the subject matter included memory for storing messages and for displaying the different messages based on position on the golf course.

5. Exhibit A attached hereto is a true copy of a screen printout of the Macintosh computer (LC III) that was used to create the captioned application. The "AD CIP" file was created prior to October 11, 1994. The "Get Info" function of the Macintosh reveals that the first drafts of the "Ad Specification," "Ad Claims," and "Ad Abstract" were all created before October 11, 1994. Attached as part of Exhibit A are photographs of the screen showing the "Get Info" results. Exhibit A shows the CIP patent application relating to "Advertising" based on the parent application relating to use of GPS on golf courses was commenced before October 11, 1004.

6. Exhibit B are the printouts of the "Ad Abstract" and the "Ad Claims" listed in the screen printout of Exhibit A. First drafts were created prior to October 11, 1994 as demonstrated by the "Get Info" function (*see* Exhibit A). The "Ad Specification" was also created prior to October 11, 1994.

7. Exhibit C attached hereto is a true copy of a screen printout of the Macintosh computer (LC III) that was used to create the captioned application. Various figures in the "Ad Drawings" file were created prior to October 11, 1994. The "Get Info" function of the Macintosh reveals that the first drafts of the Figs. 5 and 6 were not created before October 11, 1994, but all remaining Figures have first drafts created before October 11, 1994. Of course, several of the Figures are from the parent application. Figure 1 (attached as part of Exhibit C) was created before October 11, 1994 and was "last modified" September 14, 1994, as shown. From Figure 1 and the accompanying text (*see* specification pp. 11-12), messages to the golfer (in the case "Tips") are displayed based on the golfer's location and are stored in memory 25.

8. From at least a time just prior to October 11, 1994 through the filing of the application on December 30, 1994, preparation of the captioned patent application continued. We did not abandon, suppress, or conceal the ideas set forth in the claimed invention during at least the time beginning just prior to October 11, 1994 through the filing of the application on December 30, 1994. One of the drawings of Exhibit C was created in September 1994 and another in November 1994 showing continued work on the preparation of the application.

9. Upon information and belief, it is my informed understanding that diligence in reducing the invention to practice was therefore maintained from at least as early as just prior to October 11, 1994 through the filing of the application on December 30, 1994.

10. I declare that all statements made herein of my own knowledge are true, and that all statements of my own belief are believed to be true, and further that these statements were made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under the United States Code, Title 18 § 1001, and that such willful false statements may jeopardize the validity of the patent, and any reexamination certificate issuing thereon.

17 Feb 2005
Date

Charles D. Huston

EXHIBIT A

APS Drive™

52 items | 259.1 MB in disk | 255.2 MB available

Name	Size	Kind	Label	Last Modified
Applications	11.7 MB	folder	—	Sun, Dec 15, 1996, 10:10 AM
USAF	2.4 MB	folder	—	Thu, Nov 28, 1996, 3:38 AM
Legal Forms	5.8 MB	folder	—	Mon, Nov 11, 1996, 12:56 AM
GPS Freight	213K	folder	—	Sat, Nov 9, 1996, 10:47 PM
Evan's Stuff	56.6 MB	folder	—	Sun, Sep 22, 1996, 5:06 PM
Evan's School	9.7 MB	folder	—	Sun, Sep 22, 1996, 4:52 PM
For Fun!	272K	folder	—	Sun, Sep 22, 1996, 4:40 PM
Andrea's Stuff	3.2 MB	folder	—	Sun, Aug 18, 1996, 7:28 PM
ClarisDraw Folder	3.4 MB	folder	—	Mon, Mar 25, 1996, 5:50 PM
Apple Extras	986K	folder	—	Sun, Dec 10, 1995, 12:01 AM
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GPS GOLF	6 MB	folder	—	Sun, Oct 22, 1995, 9:07 PM
GPS Golf	17K	folder	—	Thu, Sep 19, 1996, 7:16 PM
5 Year Combined	1.1 MB	Microsoft Excel docu...	—	Sun, Oct 22, 1995, 9:07 PM
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OGS License	383K	folder	—	Sun, Apr 23, 1995, 9:24 PM
Proshot Presentation 1.3.95	51K	PowerPoint document	—	Sun, Jan 1, 1995, 10:19 AM
Patent Matters	2 MB	folder	—	Sat, Dec 31, 1994, 3:54 PM
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Ad Patent PCT	111K	folder	—	Fri, Dec 30, 1994, 3:15 PM
CIP Application	621K	folder	—	Sat, Aug 27, 1994, 6:13 PM
Ad CIP	672K	folder	—	Mon, Aug 27, 1956, 2:25 PM
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52 items | 259.1 MB in disk | 255.2 MB available

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Marathon *f*	12.5 MB	folder	—	Sat, Jul 1, 1995, 2:55 PM
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MacInTax 94	16.8 MB	folder	—	Sun, Mar 26, 1995, 4:51 PM
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LABEL TEMPLATE	9K	MacLabelPro™ docu...	—	Wed, Dec 14, 1994, 5:53 PM
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Red Air	136K	folder	—	Sat, Oct 22, 1994, 7:08 PM
Seldom Used Archive.sit	31.1 MB	StuffIt Deluxe archive	—	Sat, Oct 22, 1994, 2:34 PM
SimpleText	60K	application program	—	Mon, Jul 25, 1994, 6:00 PM
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Netscape Personal Edition *f*	10.6 MB	folder	—	Mon, Aug 27, 1956, 12:53 PM
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For Fun!	272K	folder	—	Sun, Sep 22, 1996, 4:40 PM
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Ad Abstract	17K	Microsoft Word docu...	—	Fri, Dec 30, 1994, 11:29 AM
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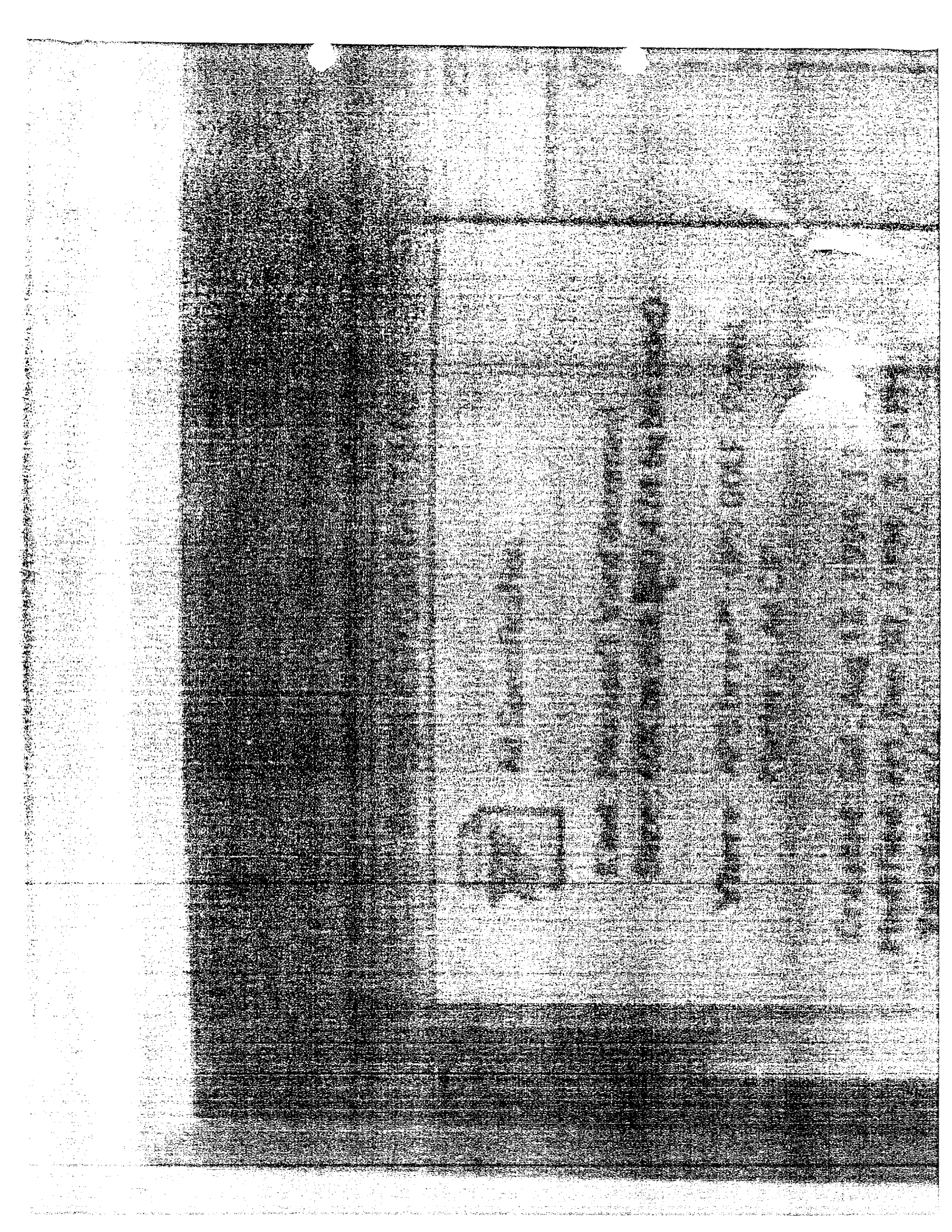

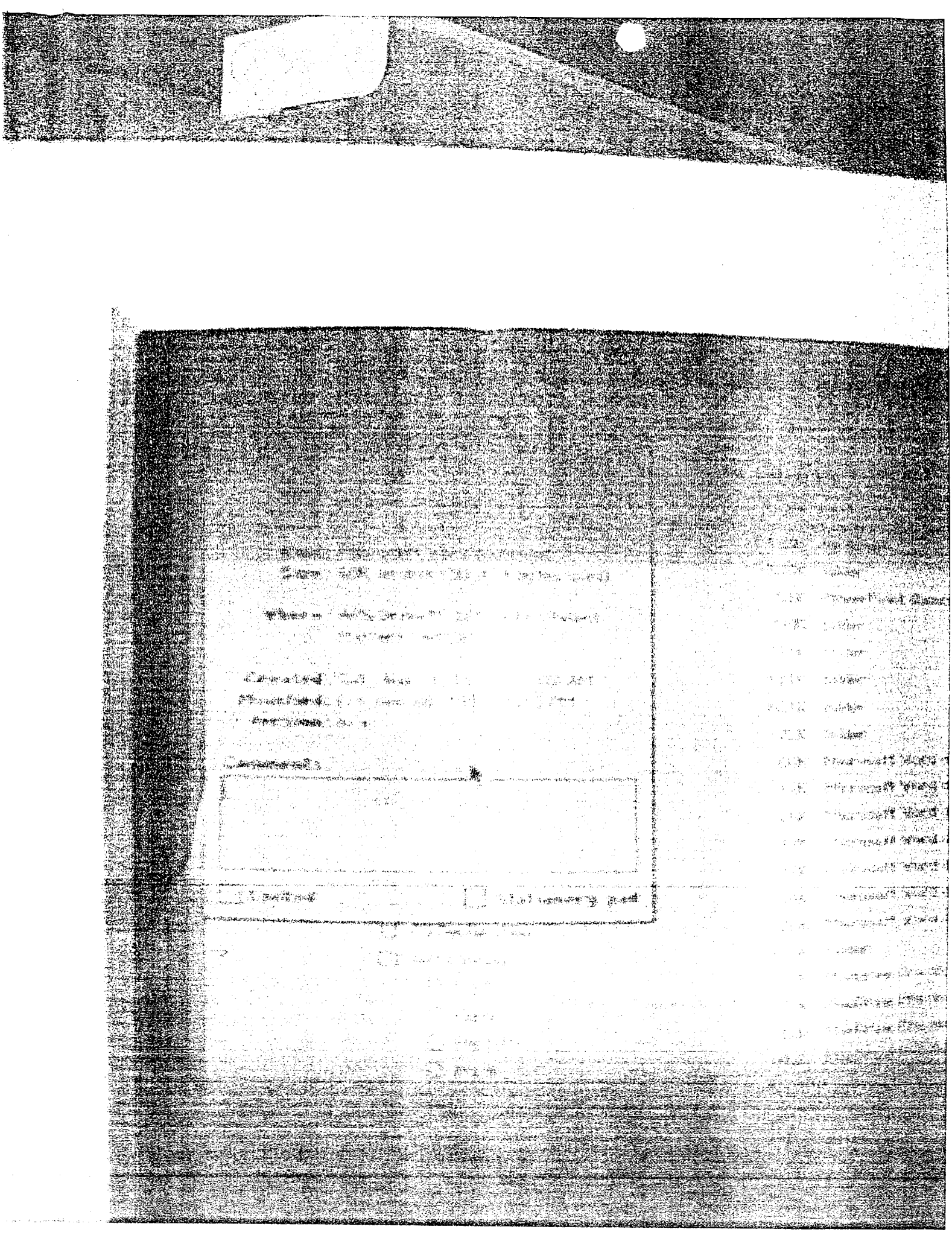

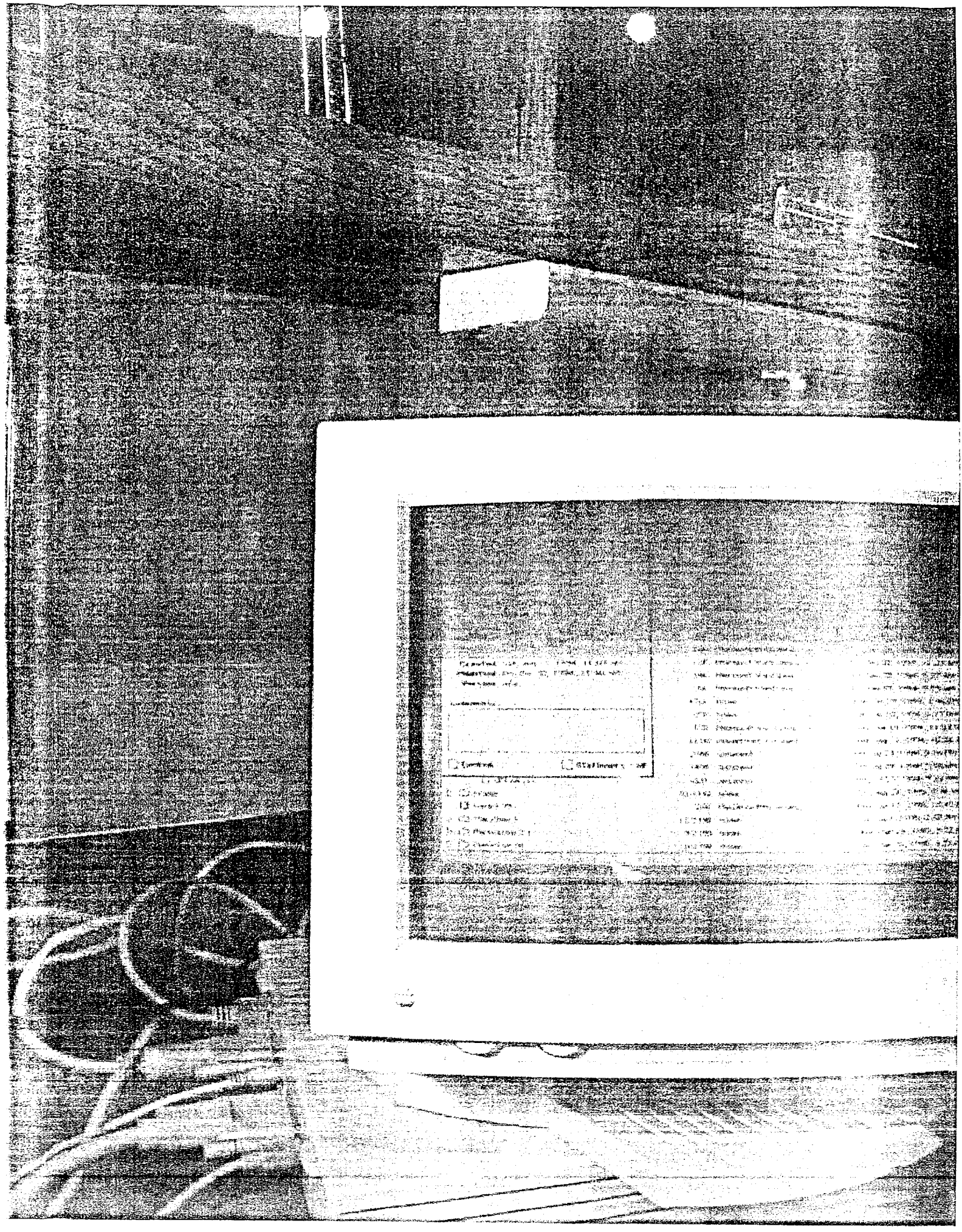

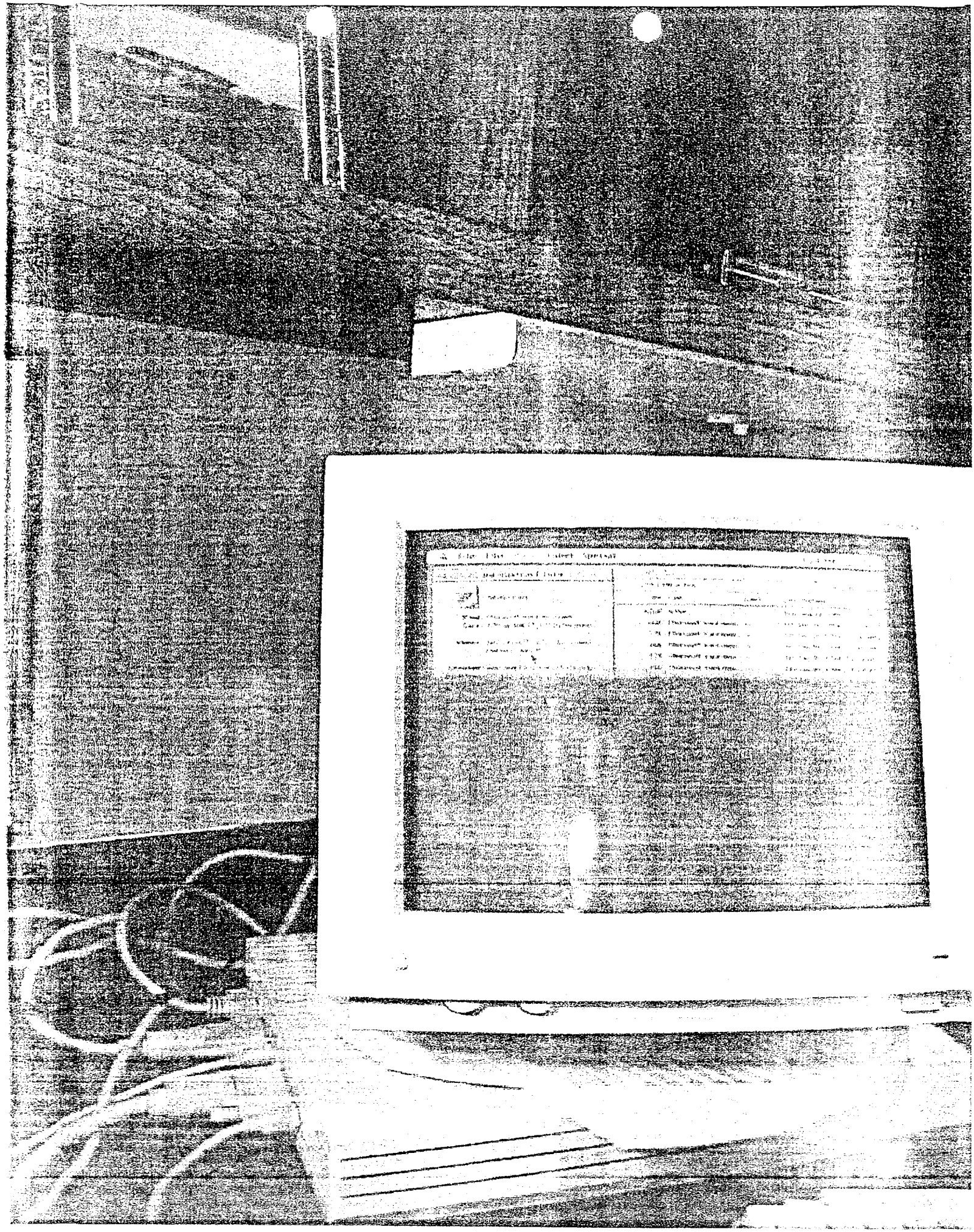

EXHIBIT B

ABSTRACT OF THE DISCLOSURE

A method, apparatus, and system is described for displaying a message to a golfer on a golf course. The system includes a number of GPS receivers attached to carts (or handheld) which display golf information and/or messages. The GPS receiver includes a display which can show the distance to the golf cup or other feature on a golf hole. The display can show a message, such as an advertising message, to the golfer. The message is shown at convenient, nonintrusive times. For example, such messages are shown at predetermined locations on the golf course such as before the first hole, after the last hole, or between holes. Additionally, such messages can be displayed using location information to determine if the receiver is moving or stopped. Finally, such messages may be displayed based on the activity of the golfer, such as scorecard input or refreshment ordering. In a preferred form, a pen input display capable of graphics is used. The system also includes a pro shop monitor where the location of each GPS receiver is shown on the golf course. The pro shop can send messages to all receivers or individual receivers.

1st Counter

Aug 13, 1994

We Claim:

1. A method for displaying a message to a golfer on a golf course using the global positioning satellite system comprising the steps of:

positioning a remote global positioning satellite receiver on the golf course;

determining a position of the remote receiver on the golf course using the global positioning satellite system; and

displaying the message to the golfer at predetermined locations based on the position of the remote receiver.

2. The method of claim 1, said message comprising an advertising message to the golfer.

3. The method of claim 1, including the step of determining if the remote receiver is moving using said position and displaying said message when the remote receiver is moving.

4. The method of claim 3, the step of determining if the remote receiver is moving including the substeps of determining another position of the remote receiver and comparing said position and said other position to determine if the remote receiver is moving.

5. The method of claim 1, said message comprising a graphic depiction.

6. The method of claim 1, the displaying step including displaying a golf hole layout on said golf course at other locations on the golf course.

7. The method of claim 1, the displaying step including displaying golf information in addition to said message at other locations on the golf course.

8. The method of claim 7, said golf information comprising a scorecard and said message comprising an advertising message.

9. The method of claim 7, said golf information comprising a refreshment order page and said message comprising an advertising message.

10. The method of claim 1, including the step of determining the approximate distance of a golf ball to a feature on the golf course including the substeps of storing the location of the feature in a database, positioning the remote receiver proximate to a golf ball, and determining the distance between said stored feature location and said remote receiver position.

11. The method of claim 1, including the step of determining an error correction for the global positioning satellite system comprising the substeps of -

positioning a global positioning satellite receiver at a reference location having a known position,

determining the apparent position of the reference location using the receiver, and

calculating an error correction based on the apparent position and the known position of the reference location.

12. An apparatus for displaying a message to a golfer on a golf course using the global positioning satellite system comprising:

a global positioning receiver means for receiving signals indicative of the apparent position of the receiver means using the global positioning satellite system and positionable on the golf course;

means linked to said global positioning receiver means for determining the position of the receiver means on the golf course; and

display means for displaying the message to the golfer.

13. The apparatus of claim 12, said display means being operable for displaying a graphic representation of said message.

14. The apparatus of claim 13, said display means including digitizer means overlaying said graphic representation and a pen operable for providing inputs to said display means.

15. The apparatus of claim 12, said display means being operable for displaying a graphic representation of a golf hole to the golfer.

16. The apparatus of claim 12, said apparatus including memory means for storing different advertising messages and means for displaying different messages at different positions of the receiver means on the golf course.

17. The apparatus of claim 12, including means for communicating messages to the display.

18. The apparatus of claim 12, said display being connected to the global positioning receiver means for displaying the message at predetermined positions of the receiver means on the golf course.

19. The apparatus of claim 12, said display being operable for displaying the message based on the activity of the golfer.

20. The apparatus of claim 10, wherein said activity is a golf score input.

EXHIBIT C

APS Drive™

62 items — 259.1 MB in disk — 255.2 MB available

Name	Size	Kind	Label	Last Modified	
C5 Declaration	26K	Microsoft Word docu...	—	Fri, Dec 30, 1994, 9:15 AM	Created
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Fig 6	77K	MacDraw Pro docum...	—	Wed, Dec 28, 1994, 3:00 PM	12/25/94
Fig 10	17K	MacDraw Pro docum...	—	Wed, Dec 28, 1994, 10:18 AM	Nov 14, 1993
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Fig 3	26K	MacDraw Pro docum...	—	Wed, Dec 28, 1994, 8:17 AM	Nov 14
Fig 2	26K	MacDraw Pro docum...	—	Wed, Dec 28, 1994, 8:16 AM	Nov 14
Fig 1	94K	MacDraw Pro docum...	—	Wed, Sep 14, 1994, 8:54 PM	Aug 29, 1994
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ltr Agr 2 Buckman 8.18.94	17K	Microsoft Word docu...	—	Mon, Sep 19, 1994, 11:07 PM	
ORS Golf Presentation	111K	PowerPoint document	—	Wed, Aug 10, 1994, 10:26 AM	
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Marathon ƒ	12.5 MB	folder	—	Sat, Jul 1, 1995, 2:55 PM	
Persuasion 2.1	9.2 MB	folder	—	Wed, Mar 29, 1995, 9:12 PM	
MacInTax 94	16.8 MB	folder	—	Sun, Mar 26, 1995, 4:51 PM	
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LABEL TEMPLATE	9K	MacLabelPro™ docu...	—	Wed, Dec 14, 1994, 5:53 PM	
APS Stuff	32.2 MB	folder	—	Sat, Dec 10, 1994, 6:57 PM	
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Seldom Used Archive.sit	31.1 MB	StuffIt Deluxe archive	—	Sat, Oct 22, 1994, 2:34 PM	
SimpleText	60K	application program	—	Mon, Jul 25, 1994, 6:00 PM	

62 items | 259.1 MB in disk | 255.2 MB available

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ltr Agr 2 Buckman 8.18.94	17K	Microsoft Word docu...	—	Mon, Sep 19, 1994, 11:07 PM
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▷ MacInTax 94	16.8 MB	folder	—	Sun, Mar 26, 1995, 4:51 PM
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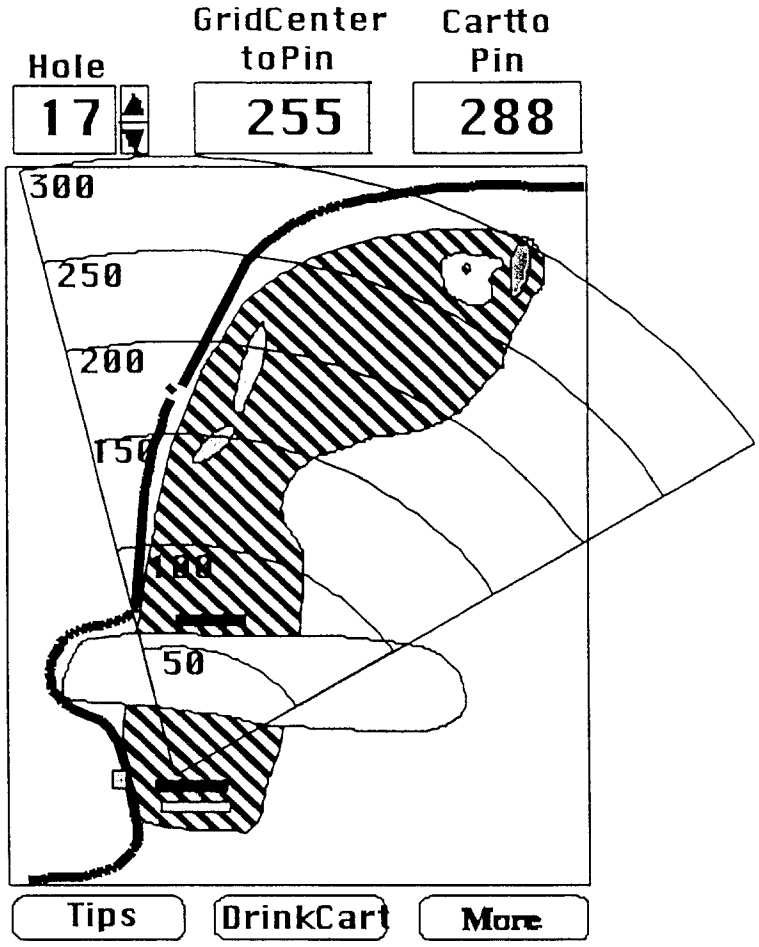
▷ Red Air	136K	folder	—	Sat, Oct 22, 1994, 7:08 PM
Seldom Used Archive.sit	31.1 MB	StuffIt Deluxe archive	—	Sat, Oct 22, 1994, 2:34 PM
SimpleText	60K	application program	—	Mon, Jul 25, 1994, 6:00 PM



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Get Info

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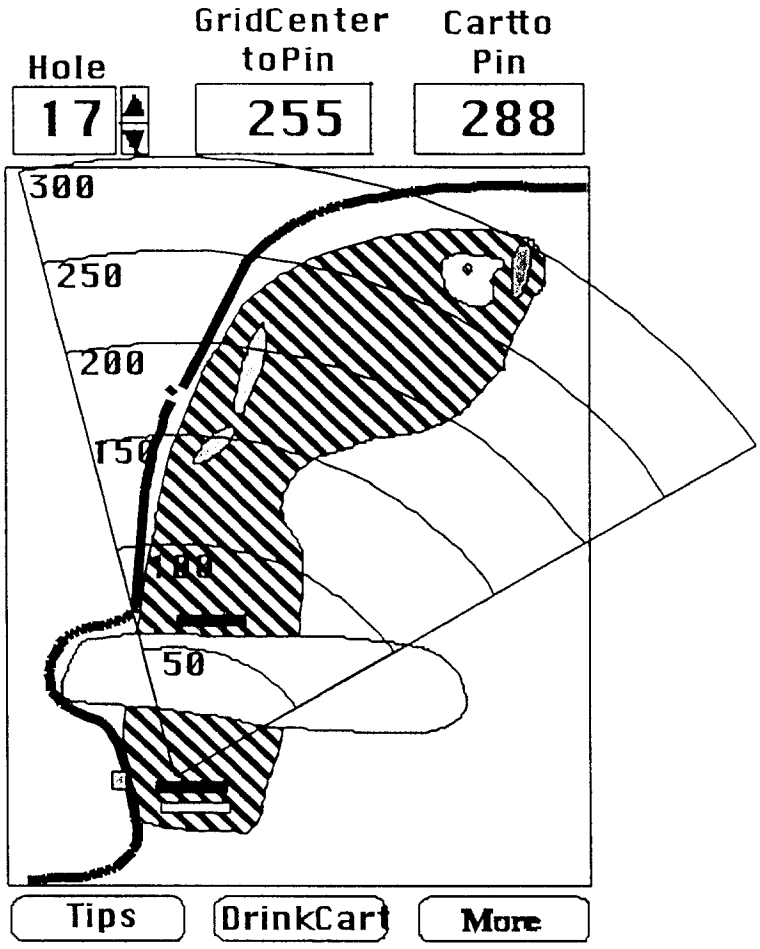
Hole
17
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Huston et al.

Serial No. 10/772,071

Filed: February 4, 2004

For: METHOD AND APPARATUS FOR MESSAGE DISPLAY ON A GOLF COURSE

§ Group Art Unit: 2681
§ Examiner: Gregory C. Issing
§
§ Atty. Dkt. No. 5863-00203
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§

I hereby certify that this correspondence is being transmitted via facsimile or deposited with the U.S. Postal Service with sufficient postage as First-Class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313, on the date indicated below.

2/17/05
Date

Pamela Gerik
Pamela Gerik

DECLARATION OF CHARLES D. HUSTON UNDER 37 C.F.R. § 1.131 REGARDING TAKAHATA

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

I, Charles D. Huston, hereby declare and state that:

1. Daryl Cornish and I are co-inventors of the subject matter claimed in U.S. Patent No. 5,364,093 ('093 Patent), which was issued on November 15, 1994. In addition, we are co-inventors of the captioned application. The Office Action mailed September 17, 2004 has cited as a reference against certain claims JP 3-134715 to Takahata et al. with an effective date of June 7, 1991.

2. In about February 1991, I began drafting the '093 Patent application while obtaining input (information and notes on specific embodiments of the invention) from Daryl Cornish. Exhibit A attached hereto is a printout from my Macintosh computer showing drafts of claims and abstract, created in February 1991. In addition, Exhibit A shows the "Last Modified" dates for various figures.

3. Patent preparation was difficult after the initiation of the Gulf War because of my military obligations, and was discontinued after April 3, 1991 when I was called to active duty by the Air Force Reserves, for F-16 training as a result of the Gulf War. A copy of my orders is attached hereto as Exhibit

B. During this time, I was unable to continue my work on the patent application as a result of my military obligations.

4. Formal training lasted under July 3, 1991, but my military obligations continued through November 1991 as indicated by my day planner for the period from July 1991 through December 15, 1991, attached hereto as Exhibit C, and by my Aircraft Logs attached hereto as Exhibit D.

5. Upon my return to work at Schlumberger on July 8, 1991, following the Fourth of July holiday, I was greeted by a mountain of work that had accumulated during my absence.

6. As such, during July and early August, the entirety of my time was consumed between my continuing military obligations and the backlog of work that had piled up at Schlumberger (*See* Exhibits C and D).

7. The remaining portion of August and early September was consumed by a vacation and my Mother's illness and death (*See* Exhibit C). Specifically, my vacation ran from Saturday, August 10, 1991 until Sunday, August 18, 1991, and consisted of a trip to Nebraska to visit family and attend a family reunion. My Mother's illness and death occupied my time from August 27, 1991 until Septembr 16, 1991.

8. Following my mourning period, I returned to Schlumberger on September 6, 1991 and continued to catch up on my job duties, as well as prepare revised drafts of the '093 Patent application, and flying for the Air Force on at least six days in connection with my combat qualifications. Around this same time, I was also required to travel to Europe on Schlumberger business, which lasted from September 23, 1992 through October 12, 1991, during which time Daryl Cornish and I attended the same Schlumberger software conference (*See* Exhibits C and D).

9. Upon my return from Europe, my time was again consumed between Schlumberger and combat qualifications. In this regard, I flew five days in October 1991 and seven days in November 1991, including additional days of non-flying time, such as weekend drill (*See* Exhibits C and D).

10. Specifically, as indicated by my calendar and flight log (Exhibits C and D), I went to a family reunion in Nebraska from August 10, 1991 until August 18, 1991; I was on military status (actual flight days) on September 7, 8, 18, 19, 21, and 22, 1991; I went to Europe on Schlumberger business from

September 23, 1991 until October 12, 1991; and I was on military status (actual flight days) on October 17, 19, 23, 30, and 31, 1991 and November 1, 2, 5, 16, 17, 19, and 26, 1991. In addition, I pulled more military duty than shown by my flight days, listed above.

11. In the midst of my busy schedule, I continued to revise the application for the '093 Patent during September, October, and November 1991. The attached computer files are evidence of continuing work during this period, although my computer overwrites the date for each computer file with the date the file was last modified.

12. In addition to the activity described above, also during November 1991 and early December 1991, Daryl Cornish and I reviewed the '093 Patent application and discussed changes and revisions thereto.

13. Daryl Cornish's input regarding radio communication was one item I was waiting on to complete the '093 Patent application.

14. In addition, Daryl Cornish and I had been attempting to obtain a GPS receiver to build a working model, such efforts proved unsuccessful since the Gulf Ware largely used up any remaining supply of GPS receivers.

15. The Patent Office originally indicated that the Takahata reference had a publication date of September 1991. I now understand the Patent Office believes the effective date of Takahata is June 7, 1991.

16. Upon information and belief, it is my informed understanding that diligence in reducing the invention to practice was therefore maintained from at least as early as just prior to June 7, 1991 through the filing of the parent application on December 10, 1991. We did not abandon, suppress, or conceal the ideas in the application for the '093 Patent during at least the time beginning just prior to June 7, 1991 through the filing on December 10, 1991.

17. I declare that all statements made herein of my own knowledge are true, and that all statements of my own belief are believed to be true, and further that these statements were made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under the United States

Code, Title 18 § 1001, and that such willful false statements may jeopardize the validity of the patent, and any reexamination certificate issuing thereon.

17 February 2005
Date

Charles D. Huston

APS Drive™

58 items | 259 MB in disk | 255.2 MB available

Name	Size	Kind	Label	Last Modified
Applications	11.7 MB	folder	—	Sun, Dec 15, 1996, 10:10 AM
USAF	2.4 MB	folder	—	Thu, Nov 28, 1996, 3:38 AM
Legal Forms	5.8 MB	folder	—	Mon, Nov 11, 1996, 12:56 AM
GPS Freight	213K	folder	—	Sat, Nov 9, 1996, 10:47 PM
Evan's Stuff	56.6 MB	folder	—	Sun, Sep 22, 1996, 5:06 PM
Evan's School	9.7 MB	folder	—	Sun, Sep 22, 1996, 4:52 PM
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Parent Application	714K	folder	—	Tue, Nov 12, 1996, 1:57 AM
Response to OA	43K	document	—	Sat, Aug 13, 1994, 11:10 AM
New Drawings	247K	folder	—	Sat, Aug 13, 1994, 10:53 AM
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131 Chad's Declaration copy	26K	document	—	Sun, Apr 17, 1994, 7:20 PM
131 Chad's Declaration copy 2	26K	document	—	Sun, Apr 17, 1994, 7:20 PM
131 darryl's Declaration	26K	document	—	Fri, Apr 15, 1994, 7:43 AM
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EXHIBIT A

APS Drive™

58 items | 259 MB in disk | 255.2 MB available

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Golf GPS Claims copy	9K	Microsoft Word docu...	—	Thu, Feb 14, 1991, 11:02 AM
Abstract	17K	Microsoft Word docu...	—	Tue, Feb 12, 1991, 8:47 AM
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Marathon *f*	12.5 MB	folder	—	Sat, Jul 1, 1995, 2:55 PM
Persuasion 2.1	9.2 MB	folder	—	Wed, Mar 29, 1995, 9:12 PM
MacInTax 94	16.8 MB	folder	—	Sun, Mar 26, 1995, 4:51 PM
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Red Air	136K	folder	—	Sat, Oct 22, 1994, 7:08 PM
Seldom Used Archive.sit	31.1 MB	StuffIt Deluxe archive	—	Sat, Oct 22, 1994, 2:34 PM
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GPS Calibrate	230K	folder	—	Mon, Aug 27, 1956, 1:22 PM
Netscape Personal Edition *f*	10.6 MB	folder	—	Mon, Aug 27, 1956, 12:53 PM

GPS Golf Duplicate

13 items | 151.1 MB in disk | 3 MB available

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Fig 10 - Cart to Pin	10K	document	—	Wed, Mar 27, 1991, 8:19 AM
Fig 11 - Mark to Pin	10K	document	—	Wed, Mar 27, 1991, 8:17 AM
FIG 2 -Remote Unit copy	10K	document	—	Wed, Feb 20, 1991, 8:03 AM
Fig 3 - Base Station	10K	document	—	Wed, Feb 20, 1991, 7:57 AM
Fig 6 - Calibration Flow	10K	document	—	Thu, Feb 14, 1991, 4:18 PM
Fig 7 - Remote Flow Chart	10K	document	—	Fri, Nov 29, 1991, 5:46 PM
FIG 8 - CART KEYPAD	10K	document	—	Wed, Mar 6, 1991, 8:30 PM
Fig 9 - Projections	10K	document	—	Tue, Dec 10, 1991, 10:38 AM
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Golf GPS Claims	13K	Microsoft Word docu...	—	Thu, Feb 14, 1991, 11:02 AM
Specification	33K	Microsoft Word docu...	—	Fri, Nov 29, 1991, 6:24 PM

REQUEST AND AUTHORIZATION FOR ACTIVE DUTY TRAINING/ACTIVE DUTY TOUR

(THIS FORM IS SUBJECT TO THE PRIVACY ACT OF 1974-USE SEARCH PAS-AF FORM 11)

BY ORDER OF THE SECRETARY OF THE AIR FORCE

1. GRADE, NAME (Last, First, MI) CAPT HUSTON, CHARLES D	2. SSN 508-72-1322	3. SECURITY CLEARANCE TOP SECRET	4. DAFSC 01115F
5. UNIT OF ASSIGNMENT 704 TAC FTR SQ BERGSTROM AFB TX 78743-5000	6. PAS CODE S10TFLLH	7. PRIMARY DEPN JODI L	8. PAS CODE CD4 -
9. PRESENT ADDRESS 4607 TRAIL WEST DRIVE AUSTIN TX 78735-0000 CDD	9a. CORPORATE LIMITS OF DUTY STATION ☐	9b. COMMUTING AREA CDN ☐ YES(2) ☒ NO(1)	10. AUTHORIZED TO PARTICIPATE IN FLYING ACTIVITIES THIS TOUR ☒ YES ☐ NO
11. Mbr is ordered to AD for 92 *days plus auth tvl time CPM	12. TYPE OF TOUR SCHOOL		
13. AUTH AT TVL DAYS N/A	14. TOTAL AT TVL DAYS	15. AT DAYS OBLIGATED THIS YR	16. AT ROUND TRIPS USED THIS YR (will not accumulate)
	17. TNG-CAT-IND 28 CPS	18. TOUR-IND F16A/C001CN CPT	
19. WILL REPORT TO (Unit and location) BLDG 48 MCCONNELL AFB KS 76211 CCL	20. REPORTING DATA (Hour (CDM) Dy, Mo, Yr) CCC 0730 03 APR 91	21. RELEASE DATE (Dy, Mo, Yr) 03 JUL 91	22. MEAN CODE CCB N/A
			23. MAN-DAY ID CRR N/A

24. VARIABLE TOUR STATEMENT. (Applies to AFRES units only.) *If member remains on special/school tour in excess of days shown in block 11, this order need not be amended unless this order exceeds -- days.

25. File travel voucher and STATEMENT OF TOUR OF DUTY with in 5 workdays after tour completion. Travel days will not exceed CDDPH authorized travel time. Per diem is based on the availability of government quarters and meals; CHECK the item billeting office STORE GOVT QUARTERS MUST BE USED WHEN AVAILABLE. Turn in all promotional items such as gifts, bonus tickets, etc. to the AFO.

U-102529.051

26. REMARKS (AAU-27OAN)

COURSE: F16A/C001CN; TLN: S10T100211; CLASS: 91DCA; CLASS ST DT: 3 APR 91; CLASS GRAD DT: 3 JUL 91; UNIT OF ASGN: 184 TFG, MCCONNELL AFB KS 67211; REPORT TO SCHOOL SECY, 184 TFG, BLDG 48, MCCONNELL AFB, NLT 0800 CLASS START DATE. ALL RECORDS, FLT, MEDICAL, CLEARANCES AND ORDERS MUST BE UP-TO-DATE AND CORRECT OR STUDENT WILL BE SENT HOME. ALL FLIGHT GEAR AND LINE BADGE REQUIRED. POC AUTHORIZED. PAY AND ALLOWANCE FUND CITE: 5713700 501 6272 P728.07/.16/.18/.20/.22. Variations in itinerary authorized. TR cost N/A. Individual must pay surcharge at government messing facilities. Report to CBPO/DPMU prior to departure. Traveler not eligible for, or has applied for but not received a government contractor-issued travel card. Limit the travel advance payment to 80 per cent of authorized and allowable out-of-pocket expenses. You should be prepared to defray quarters and transportation expenses. You must comply with AFR 35-10 and AFR 35-11. You should have full complement of uniforms. If course is extended or curtailed notify the Training Office, DSN685-3172.

AUTHORIZED COSTS	27. TRAVEL		28. PER DIEM		29. OTHER	30. TOTAL
	270.00	F000052 P001480	4900.00	F000052 P001485	0.00	5170.00

31. PAY AND ALLOWANCE 5713700 501 6272 P728.02 380100 91TA0041C03 0462

TRAVEL AND PER DIEM 5713700 501 6254 M11300 P726.13 P726.14 668400

CERTIFYING OFFICIAL

32. APPROVING OFFICIAL (TYPED Name, Grade, AUTOVON) DON R. BENSKI MSGT AV 685-3172	33. SIGNATURE A signed letter requesting the issuance of this order is on file with the orders authenticating official.	34. DATE 26 FEB 91
35. DEPARTMENT OF THE AIR FORCE (Include designation & location of headquarters) HQ 924 TACTICAL FIGHTER GROUP (AFRES) BERGSTROM AFB, TEXAS 78743-5000 CDB/01	36. RESERVE ORDER NO. D-02136 CPT	37. DATE 26 FEB 91 CPZ
	TDN FOR THE COMMANDER	
38. DISTRIBUTION 10-Indiv; 1-Unit/ACE/DPMAQ/DPMPT/IN 67 CPTS/ACFPT	39. SIGNATURE ELEMENT OF AUTHENTICATING OFFICIAL GREGORY C TRAPUZZANO, SNSgt, USAFR (AFRES) Asst Chief of Information Management	OFFICIAL

STATEMENT OF TOUR OF DUTY

40.

	LOCATION	HOUR(mil)	DAY	MONTH		LOCATION	HOUR(mil)	DAY	MONTH	MODE OF TVL
a. DEPART					b. ARRIVE					
c. DEPART					d. ARRIVE					

41. THE FOLLOWING STATEMENT APPLIES ONLY TO PERSONNEL WITH MILITARY SPOUSES.
My spouse ☐ (was) ☐ (was not) in Active Duty status during this tour.

42. THE FOLLOWING STATEMENT APPLIES TO ALL PERSONNEL.
I ☐ (did) ☐ (did not) occupy Govt Quarters (Includes Contract Qtrs)

43. I have applied for appropriate leave from Fed Civil Svc employment. ☐ (yes) ☐ (N/A) (0)

44. I certify that I have complied with the above order. I hereby claim any amount due me. The statements on this form are true and complete. Payment or credit has not been received. If this tour was extended under the variable tour provision, it was with my prior knowledge and consent.

45. MEMBER'S SIGNATURE 46. DATE

CERTIFICATION

47. Member reported for duty as ordered at hours on and was released from duty at hours on.

48. MEMBER ☐ (is) ☐ (is not) entitled to flight pay.

49. CERTIFYING OFFICIAL'S NAME, GRADE, TITLE, AND AUTOVON

50. SIGNATURE 51. DATE

EXHIBIT 30

APR 89 (CG) PSC 003010 FOR COUNSEL ONLY

Huston

FROM: DPMPT 12 FEB 91

SUBJECT: NOTIFICATION OF TRAINING QUOTA

TO: 704 TFS/CC

CAPT CHARLES D. HUSTON attend F16A/C001CM School, 2 APR - 3 JUL 91, at MCCONNELL AFB KS.

Individual, Supervisor, and Commander should read and sign the attached RIP indicating acceptance or declination and return it to the 924 DPMPT NLT 2 MAR 91.

Individual is scheduled to out-process o/a 2 MAR 91 UTA and must call Ext 3172 to verify date and time. It is the individual's responsibility to make billeting reservations and travel arrangements.

Individual must be five (5) pounds UNDER his/her Maximum Allowable Weight (MAW) and meet all other requirements of AFR 35-11 and AFR 35-10 to out-process.

Individual must have at least one (1) year retainability upon graduation for courses 15 days or less. Courses OVER 15 days require individual to have at least two (2) years retainability upon graduation IAW AFR 50-5, chapter 11-3c. Individual can extend/reenlist to meet this requirement.

POC Irene Wolf, Ext 3172.

Don R. Benski

DON R. BENSKI, MSgt, USAFR
Chief, Reserve Education and Training

Atch
School Rip

743 - 7855

EXHIBIT C.

JULY 1991

JUNE 1991 · JULY 1991 · AUGUST 1991

MONDAY, JULY 15 196/169

TUESDAY, JULY 16 197/168

WEDNESDAY, JULY 17 198/167

8:30 Staff Mtg ASC

THURSDAY, JULY 18 199/166

FRIDAY, JULY 19 200/165

Fri 10 SLCS Stf Mtg
Fly 11:45 Show

SATURDAY, JULY 20 201/164

Comp →

SUNDAY, JULY 21 202/163

Eric AH [illegible]

JULY 1991

SEPTEMBER 1991 · OCTOBER 1991 · NOVEMBER 1991

MONDAY, JULY 22 203/162 Eric to AH w/ plan [illegible]

TUESDAY, JULY 23 204/161

Homestead

Fly ?

WEDNESDAY, JULY 24 205/160

THURSDAY, JULY 25 206/159

FRIDAY, JULY 26 207/158

7:30 TAG Bkfst @ Met

SATURDAY, JULY 27 208/157

SUNDAY, JULY 28 209/156

JULY 1991

MONDAY, JULY 29

Prog Rpt

1:00 Prog Ldrs Mtg

TUESDAY, JULY 30

See Rogers re Introduction [illegible]

WEDNESDAY, JULY 31

Fly am SA-1 TA

THURSDAY, AUGUST 1

10 SMR Physics

FRIDAY, AUGUST 2

10:30 Prog Ldrs

SATURDAY, AUGUST 3

Physical UTA →

Fly pm BFM

SUNDAY, AUGUST 4

AUG. 1991

MONDAY, AUGUST 5

TUESDAY, AUGUST 6

Ann Arbor Mich

WEDNESDAY, AUGUST 7

THURSDAY, AUGUST 8

8:30 Mt w/ Gay Vecher Fly AR/[illegible]

Dedication Mtg - O Club - 1:30 1207 pm brief

FRIDAY, AUGUST 9

10:30 Prog Leaders Fly AL am

SATURDAY, AUGUST 10

Go to Nebr

SUNDAY, AUGUST 11

→

AUG. 1991

MONDAY, AUGUST 12 224/141

Nebr

TUESDAY, AUGUST 13 225/140

WEDNESDAY, AUGUST 14 226/139

THURSDAY, AUGUST 15 227/138

FRIDAY, AUGUST 16 228/137

SATURDAY, AUGUST 17 229/136

SUNDAY, AUGUST 18 230/135

8th Sem Nebr

AUG. 1991

MONDAY, AUGUST 19 231/134

to

Fly AR/SAT ca

TUESDAY, AUGUST 20 232/133

2 Alan Harris re [illegible] Oaks

WEDNESDAY, AUGUST 21 233/132

AE 2pm

TP

THURSDAY, AUGUST 22 234/131

FRIDAY, AUGUST 23 235/130

Fly Ark TP

SATURDAY, AUGUST 24 236/129

SUNDAY, AUGUST 25 237/128

AUG. 1991

MONDAY, AUGUST 26 238/127

TUESDAY, AUGUST 27 239/126

Brief 1435 Fly ACM pm

WEDNESDAY, AUGUST 28 240/125

Fly AUTm

THURSDAY, AUGUST 29 241/124

A IPLA 6:30 Aquarius Spiegel

FRIDAY, AUGUST 30 242/123

Sles Program Review

SATURDAY, AUGUST 31 243/122

SUNDAY, SEPTEMBER 1 244/121

SEP. 1991

MONDAY, SEPTEMBER 2 Labor Day 245/120

TUESDAY, SEPTEMBER 3 246/119

Lee Brodie, Steve Powel, Mark Salsbury, Mtg GSees

WEDNESDAY, SEPTEMBER 4 247/118

Fly 2V 2

THURSDAY, SEPTEMBER 5 248/117

FRIDAY, SEPTEMBER 6 249/116

SATURDAY, SEPTEMBER 7 250/115

UTA →

SUNDAY, SEPTEMBER 8 Grandparents Day 251/114

SEP. 1991

AUGUST 1991 | SEPTEMBER 1991 | OCTOBER 1991

MONDAY, SEPTEMBER 9

TUESDAY, SEPTEMBER 10

WEDNESDAY, SEPTEMBER 11

MTG w/ Darling KS

THURSDAY, SEPTEMBER 12

Pierce

BEST

11:30 Dall/[illegible] Mtg

FRIDAY, SEPTEMBER 13

SATURDAY, SEPTEMBER 14

Brenda R's Wedding

SUNDAY, SEPTEMBER 15

NOVEMBER 1991 | DECEMBER 1991 | JANUARY 1992

SEP. 1991

MONDAY, SEPTEMBER 16

TUESDAY, SEPTEMBER 17

WEDNESDAY, SEPTEMBER 18

Fly SBT

THURSDAY, SEPTEMBER 19

BEST in N.Y.

Fly Show 1145 ALM-1

FRIDAY, SEPTEMBER 20

6:30 Staff Mtg

SATURDAY, SEPTEMBER 21

Fly AT-2

SUNDAY, SEPTEMBER 22

SEP. 1991

AUGUST 1991 · SEPTEMBER 1991 · OCTOBER 1991

MONDAY, SEPTEMBER 23

leave for Paris 3:30

TUESDAY, SEPTEMBER 24

Appt Cab [illegible]
Dinner [illegible]

WEDNESDAY, SEPTEMBER 25

N-Q Chest [illegible]

Cab [illegible]
Dinner [illegible]

THURSDAY, SEPTEMBER 26

Lunch JY [illegible]
[illegible]
Attend Award reception
Dinner

FRIDAY, SEPTEMBER 27

[illegible] w/ Cristoph [illegible]
[illegible] w/ [illegible]

Dinner [illegible]

SATURDAY, SEPTEMBER 28

Lunch
Dinner [illegible]

SUNDAY, SEPTEMBER 29

[illegible]
Lunch [illegible] Dinner [illegible]

NOVEMBER 1991 · DECEMBER 1991 · JANUARY 1992

SEP. 1991

MONDAY, SEPTEMBER 30

[illegible] Weekly? SSC '91 [illegible]

Sick

TUESDAY, OCTOBER 1

10:20 [illegible] arrives

Smart/[illegible] workshop

WEDNESDAY, OCTOBER 2

THURSDAY, OCTOBER 3

FRIDAY, OCTOBER 4

SATURDAY, OCTOBER 5

SUNDAY, OCTOBER 6

OCT. 1991

SEPTEMBER 1991 · OCTOBER 1991 · NOVEMBER 1991

MONDAY, OCTOBER 7 280/85

TUESDAY, OCTOBER 8 281/84

WEDNESDAY, OCTOBER 9 282/83

THURSDAY, OCTOBER 10 283/82

Park Mtg — Cal Five at 100 F

FRIDAY, OCTOBER 11 284/81

SATURDAY, OCTOBER 12 285/80

SUNDAY, OCTOBER 13 286/79

OCT. 1991

DECEMBER 1991 · JANUARY 1992 · FEBRUARY 1992

MONDAY, OCTOBER 14 Columbus Day Obs. ® Thanksgiving Day (Canada) 287/78

TUESDAY, OCTOBER 15 288/77

2:00 Mt w/ GCE Sales 1-9
3:30 Mtg

WEDNESDAY, OCTOBER 16 289/76

9:30 ASC Staff. Mtg

THURSDAY, OCTOBER 17 290/75

Fly } 3:15 Brief at UTA

FRIDAY, OCTOBER 18 291/74

AIPLA ~~Spl~~ + Mtg Wal

Church Pictures 6:30

SATURDAY, OCTOBER 19 292/73

Fly X2 at UTA

SUNDAY, OCTOBER 20 293/72

OCT. 1991

MONDAY, OCTOBER 21

~~8:30~~ 10:30 McLean

Vestry

TUESDAY, OCTOBER 22

WEDNESDAY, OCTOBER 23

10:00 Staff Mtg ASC

Fly 2:50

THURSDAY, OCTOBER 24

9:45 Jack Skelton etc ASC stg

Bible Mtg 7:15 Color Auction

FRIDAY, OCTOBER 25

7:00 TPG BKfst

SATURDAY, OCTOBER 26

SUNDAY, OCTOBER 27

SLB Ranch Family Outing

OCT. 1991

MONDAY, OCTOBER 28

SLCS Program Review

6-7:30 SLB CH Vestry @ Doubletree BFST

TUESDAY, OCTOBER 29

WEDNESDAY, OCTOBER 30

5:30-9 IP Project Review Fly B

Church Ltrg

THURSDAY, OCTOBER 31

Fly a.m.

1:00 Dental cleaning

Halloween No Fly

FRIDAY, NOVEMBER 1

Fly a.m. New Glarus O+V

SATURDAY, NOVEMBER 2

SUNDAY, NOVEMBER 3

NOV. 1991

MONDAY, NOVEMBER 4

Fr. Milieu @ SLCS
Jo. Stiockr

TUESDAY, NOVEMBER 5

Fly AR/NUC

WEDNESDAY, NOVEMBER 6

~~Staff Mtg ASC~~

THURSDAY, NOVEMBER 7

11:30-12 Lunch w/ Jeff
3:00 Kash

FRIDAY, NOVEMBER 8

11:00 SLCS PL Mtg
~~Re Surrender~~ it SLCS

SATURDAY, NOVEMBER 9

BSA Carport ---→

SUNDAY, NOVEMBER 10

NOV. 1991

MONDAY, NOVEMBER 11 Veterans Day

Men's Mtg

TUESDAY, NOVEMBER 12

Dinner w/ Carine, etc

WEDNESDAY, NOVEMBER 13

Chakra/ Conf w/ Barbara Ardence
Lunch @ Riverplace 11:30 SMS

Bishop Dinner

THURSDAY, NOVEMBER 14

TPL
SW Lyl Fed - Dll. Fly w/

FRIDAY, NOVEMBER 15

BP@ ASC/SLCS
11:30 @ Chamber ~~Military Affairs Com~~

SATURDAY, NOVEMBER 16

Drill →
Fly

SUNDAY, NOVEMBER 17

NOV. 1991

OCTOBER 1991 | NOVEMBER 1991 | DECEMBER 1991

MONDAY, NOVEMBER 18 322/43

Lab Mtg @ 3:30

Varsity

TUESDAY, NOVEMBER 19 323/42

Vice Policy @ SICS

Fly NINT

WEDNESDAY, NOVEMBER 20 324/41

AC Staff Mtg 10:30

THURSDAY, NOVEMBER 21 325/40

9-10 IBM @ ASC

FRIDAY, NOVEMBER 22 326/39

Lunch w/ Jeff McD

mr w/ Lee Mattick [?]

SATURDAY, NOVEMBER 23 327/38

SUNDAY, NOVEMBER 24 328/37

NOV. 1991

JANUARY 1992 | FEBRUARY 1992 | MARCH 1992

MONDAY, NOVEMBER 25 329/36

Lunch w/ Dr Thornton @ SICS

TUESDAY, NOVEMBER 26 330/35

Fly p.m. A/G

WEDNESDAY, NOVEMBER 27 331/34

10:30 ASC [illegible]

2 pm Conf w/ Sam re Hyperkeys [?]

THURSDAY, NOVEMBER 28 Thanksgiving Day 332/33

Montgomery's

FRIDAY, NOVEMBER 29 333/32

SATURDAY, NOVEMBER 30 334/31

SUNDAY, DECEMBER 1 335/30

DEC. 1991

NOVEMBER 1991 · DECEMBER 1991 · JANUARY 1992

MONDAY, DECEMBER 2 — 336/30

Call G Pyke
Send Dad ✓
5:30-7 Radisson Military Reception
Japanese
AF

TUESDAY, DECEMBER 3 — 337/29

1:30 Haircut
Mother in Austin
7:00 La Fonda

WEDNESDAY, DECEMBER 4 — 338/28

Coram Briefing - Dallas
5:30-7 Cktl Party

Show Sys promotion program @ SLCS Scf

THURSDAY, DECEMBER 5 — 339/26

9:00 Kate Patterson
Dr. Helber
Lunch @ AMD Bldg 3 11:30

FRIDAY, DECEMBER 6 — 340/25

B&E Lgl 9:30 Presentation
Plane to Boerne?
SLB Dinner Dance

SATURDAY, DECEMBER 7 — 341/24

Drill - 7
AF

SUNDAY, DECEMBER 8 — 342/23

DEC. 1991

FEBRUARY 1992 · MARCH 1992 · APRIL 1992

MONDAY, DECEMBER 9 — 343/22

TUESDAY, DECEMBER 10 — 344/21

WEDNESDAY, DECEMBER 11 — 345/20

Fly NINT

THURSDAY, DECEMBER 12 — 346/19

Fly NINT

FRIDAY, DECEMBER 13 — 347/18

Open House @ Nevia's 5-8

SATURDAY, DECEMBER 14 — 348/17

Eric to SA
AC party
Daedalian Mtg/Sat
P18 w/Eric/Band

SUNDAY, DECEMBER 15 — 349/16

EXHIBIT D

AIRCRAFT LOG

DATE	PILOT	START TACH	END TACH	TOTAL TRIP TIME	DESTINATION/PURPOSE
	OVERHAUL @	5047.95			Flown P/u + Test on Engine by Don Weather → Augusta for parts ADF
7/3/91	Chad	5049.18	5049.68		
7/3	Chad	5049.68	5053.49	3.81	IAB → AUS
7/4	Eric	5053.8	5057.08	3.27	AUS-LCL (Breakin)
7/5	Eric	5057.08	5060.28	3.2	AUS-LCL-AUS-LCL
7/14	Eric	5060.28	5050.19	29.91	AUS-ELP-SDM-MLTO-MSJD
7/17	Eric (UR Forreliat)	5050.19	5051.33	1.14	-SDM-JAN-TVS-JCT-AUS
7/21	ERIC	5091.33	5097	5.67	AUS-PDK
7/24	ERIC	5097	5104.16	7.16	PDK-JAN-AUS
7/30	ERIC	5104.16	5105.12	.96	
8/6	Chad	5705.12	5705.54	.35	T + G's
8/8	Chad	5705.54	5705.96	.42	

Write down anything that affects flight.
Describe fully any electronic malfunctions.

Wash Vanga
Overhauled engine ✓ Logs

TC still inop
EGT works,
ADF inop

VORs checked 7/6/91 by Austin Avionics
Max error ≤ 2° on both units by
ground test equipment

[signature]

OIL CHANGE @ 5097 hrs.

AIRCRAFT LOG

DATE	PILOT	START TACH	END TACH	TOTAL TRIP TIME	DESTINATION/PURPOSE
8/9	Chad	5105.96	5111.64	5.68	AUS → CZD
8/18	Chad	5111.64	5716.54	4.90	CZD → AUS
8/27	Chad	5116.59	5721.62	5.03	AUS → OMA
8/28	Chad	5121.62	5723.15	1.53	OMA → BBW
8/28	Chad	5123.15	5724.6	1.45	BBW → OMA
8/28	Chad	5124.60	5129.91	5.31	OMA → AUS
9/2	Chad	5129.91	5135.16	5.25	AUS → BBW
9/6	Chad	5135.16	5141.46	6.30	BBW → AUS
9/15	Eric	5741.46	5143.5	2.04	AUS-ACT-TO4-AUS
9/28	Eric	5143.5	5146.12	2.62	AUS-RKP-AUS
10/2	Eric	5146.12	5147.45	1.33	AUS-SAT-AUS
10/4	Eric	5147.45	5148.83	1.38	AUS-Sunrise Beach, Burnet, AUS

SQUAWK LIST

Write down anything that affects flight. Describe fully any electronic malfunctions.

~~start Hard. Capitol Aero says Mag Loose~~

Started OK

~~New Pts & Condenser/stick Gov/Throttle Sluggish~~
Turn Coord. Ilop

Gear Greased, Control Hinges Lubed, Tires Inflated, Pos light & gauge.

10/2/91 Replaced EGT with new Alcor 46150 S/N 219525 EGS 1

10/23/91 Propeller overhauled by Jordan Pr... San Antonio, TX

AIRCRAFT LOG

DATE	PILOT	START TACH	END TACH	TOTAL TRIP TIME	DESTINATION/PURPOSE
11/8	Eric	5148.83	5152.22	3.57	AUS-SST-SGT-AUS
11/8	Chad	5152.22	5152.88	.66	BSM/SS/lb w/ Eric
11/17	Eric	5152.88	5155.13	2.25	
11/24	Eric	5155.13	5152.12	1.79	
12/5	Chad	5157.00	5158.42	1.42	
12/5	Chad	5158.42	5159.98	1.56	
12/7	Eric	5159.58	5160.73	.75	To SCI for annual
12/7	Eric	5160.73	5161.35	.62	Back from SCI no prog
12/20	Eric	5162.0	5162.9	0.9	Back from SCI
12/28	Eric	5162.5	5166.5	3.6	
1/4	Eric	5166.5	5169.57	4.07	AUS-DAL-AUS
1/19	Chad	5167.57	5171.02	1.05	Lcl

SQUAWK LIST

Write down anything that affects flight.
Describe fully any electronic malfunctions.

DME reads > 50% high! 11/8/91
Landing Light inop 11/8/91
ELT antenna gone 11/8/91
Changed ELT battery. Now due 11/93

VOR check on ground at CLL
error: VOR 1 -0° VOR 2 0°
11/24/91
VORs crosschecked in flight 1/15/92
0-1° error
1/19/92 Removed ADF for service

DATE (mo/dy)	AIRCRAFT MAKE & MODEL	AIRCRAFT IDENT.	POINTS OF DEPARTURE / ARRIVAL FROM	TO	REMARKS, PROCEDURES, MANEUVERS	NO INSTR APP.	NO LDG.	AIRCRAFT CATEGORY Dual	AIRPLANE SEL	AIRPLANE MEL	CROSS COUNTRY	DA
8/22			~~BMA~~ BBW	~~BDW~~ ~~BHP~~				1 05	1 5			
8/26			~~BBW~~	~~CYS~~ ~~BMA~~				5 31	5 4			
9/2			AUS	BBW				5 25	5 3			
9/6			BBW	AUS				6 30	6 4			
9/8				LCL	BSM Clean + Dirty Stalls w/ Ell			.66	7			
12/5	~~AUS~~	AUS	AUC	ADS				1 42	1 5			
12/5	ADS	AUS	ADS	AUS				1 32	1 4			
					PAGE TOTAL			21 71				
					AMT. FORWARD			109 93				
					TOTAL TO DATE			131 64				

I certify that the statements made by me on this form are true.

PILOT'S SIGNATURE _____

37/131 Sch

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Huston et al.	§	Group Art Unit: 2681
	§	Examiner: Gregory C. Issing
Serial No. 10/772,071	§	Atty. Dkt. No. 5863-00203
Filed: February 4, 2004	§	
For: METHOD AND APPARATUS FOR MESSAGE DISPLAY ON A GOLF COURSE	§	

I hereby certify that this correspondence is being transmitted via facsimile or deposited with the U.S. Postal Service with sufficient postage as First-Class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313, on the date indicated below.

2/17/05 (Date) Pamela Gerik (Pamela Gerik)

DECLARATION OF CHARLES D. HUSTON UNDER 37 C.F.R. § 1.131 REGARDING DIMITRIADIS ET AL.

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

I, Charles D. Huston, hereby declare and state that:

1. I am a named inventor in the above-identified patent application, which is U.S. Patent Application No. 08/926,293, filed on Sept 5, 1997, which is a continuation of U.S. Patent Application No. 08/366,994 filed December 30, 1994 which is a continuation in part of U.S. Patent Application No. 08/313,718 filed Sept 22, 1994, which in turn is a continuation in part of U.S. Patent Application No. 07/804,368 (U.S. Pat. No. 5,314,093) filed December 10, 1991.

2. In the present application, certain claims have been rejected in reference to U.S. Patent No. 5,664,948 to Dimitriadis et al., which issued on Sept 9, 1997 and was filed on October 11, 1994. The '948 patent also claims priority from U.S. Pat. Nos. 08/282,893 and 08/283,276 both filed on July 29, 1994, but the subject matter cited by the Examiner in this case appears to have been first presented October 11, 1994.

3. In the present application, certain claims have been rejected based on certain subject matter of Dimitriadis et al, namely: "Dimitriadis et al teach the conventionality of providing both position and condition-based advertisement message presentation wherein a GPS-determined position (80) and optionally a condition (440b), is compared to a database resource 90 having advertisement messages correlated with advertisement locations/and/or times . . ." The effective date of this subject matter appears to be October 11, 1994.

4. As supported below, I, along with Darryl Cornish, conceived of the subject matter claimed in the present application within the United States before October 11, 1994. The subject matter includes an apparatus and method of displaying messages to a golfer based on location or activity of the golfer. One embodiment of the subject matter included memory for storing messages and for displaying the different messages based on position on the golf course.

5. Exhibit A attached hereto is a true copy of a screen printout of the Macintosh computer (LC III) that was used to create the captioned application. The "AD CIP" file was created prior to October 11, 1994. The "Get Info" function of the Macintosh reveals that the first drafts of the "Ad Specification," "Ad Claims," and "Ad Abstract" were all created before October 11, 1994. Attached as part of Exhibit A are photographs of the screen showing the "Get Info" results. Exhibit A shows the CIP patent application relating to "Advertising" based on the parent application relating to use of GPS on golf courses was commenced before October 11, 1004.

6. Exhibit B are the printouts of the "Ad Abstract" and the "Ad Claims" listed in the screen printout of Exhibit A. First drafts were created prior to October 11, 1994 as demonstrated by the "Get Info" function (*see* Exhibit A). The "Ad Specification" was also created prior to October 11, 1994.

7. Exhibit C attached hereto is a true copy of a screen printout of the Macintosh computer (LC III) that was used to create the captioned application. Various figures in the "Ad Drawings" file were created prior to October 11, 1994. The "Get Info" function of the Macintosh reveals that the first drafts of the Figs. 5 and 6 were not created before October 11, 1994, but all remaining Figures have first drafts created before October 11, 1994. Of course, several of the Figures are from the parent application. Figure 1 (attached as part of Exhibit C) was created before October 11, 1994 and was "last modified" September 14, 1994, as shown. From Figure 1 and the accompanying text (*see* specification pp. 11-12), messages to the golfer (in the case "Tips") are displayed based on the golfer's location and are stored in memory 25.

8. From at least a time just prior to October 11, 1994 through the filing of the application on December 30, 1994, preparation of the captioned patent application continued. We did not abandon, suppress, or conceal the ideas set forth in the claimed invention during at least the time beginning just prior to October 11, 1994 through the filing of the application on December 30, 1994. One of the drawings of Exhibit C was created in September 1994 and another in November 1994 showing continued work on the preparation of the application.

9. Upon information and belief, it is my informed understanding that diligence in reducing the invention to practice was therefore maintained from at least as early as just prior to October 11, 1994 through the filing of the application on December 30, 1994.

10. I declare that all statements made herein of my own knowledge are true, and that all statements of my own belief are believed to be true, and further that these statements were made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under the United States Code, Title 18 § 1001, and that such willful false statements may jeopardize the validity of the patent, and any reexamination certificate issuing thereon.

17 Feb 2005
Date

Charles D. Huston

APS Drive™

52 items | 259.1 MB in disk | 255.2 MB available

Name	Size	Kind	Label	Last Modified
Applications	11.7 MB	folder	—	Sun, Dec 15, 1996, 10:10 AM
USAF	2.4 MB	folder	—	Thu, Nov 28, 1996, 3:38 AM
Legal Forms	5.8 MB	folder	—	Mon, Nov 11, 1996, 12:56 AM
GPS Freight	213K	folder	—	Sat, Nov 9, 1996, 10:47 PM
Evan's Stuff	56.6 MB	folder	—	Sun, Sep 22, 1996, 5:06 PM
Evan's School	9.7 MB	folder	—	Sun, Sep 22, 1996, 4:52 PM
For Fun!	272K	folder	—	Sun, Sep 22, 1996, 4:40 PM
Andrea's Stuff	3.2 MB	folder	—	Sun, Aug 18, 1996, 7:28 PM
ClarisDraw Folder	3.4 MB	folder	—	Mon, Mar 25, 1996, 5:50 PM
Apple Extras	986K	folder	—	Sun, Dec 10, 1995, 12:01 AM
To take 11.26.95	332K	folder	—	Sun, Nov 26, 1995, 10:22 PM
GPS GOLF	6 MB	folder	—	Sun, Oct 22, 1995, 9:07 PM
GPS Golf	17K	folder	—	Thu, Sep 19, 1996, 7:16 PM
5 Year Combined	1.1 MB	Microsoft Excel docu...	—	Sun, Oct 22, 1995, 9:07 PM
5 Year Combined For (Convert...	1.1 MB	document	—	Wed, Oct 4, 1995, 1:28 PM
OGS License	383K	folder	—	Sun, Apr 23, 1995, 9:24 PM
Proshot Presentation 1.3.95	51K	PowerPoint document	—	Sun, Jan 1, 1995, 10:19 AM
Patent Matters	2 MB	folder	—	Sat, Dec 31, 1994, 3:54 PM
Parent Application	714K	folder	—	Tue, Nov 12, 1996, 1:57 AM
Ad Patent PCT	111K	folder	—	Fri, Dec 30, 1994, 3:15 PM
CIP Application	621K	folder	—	Sat, Aug 27, 1994, 6:13 PM
Ad CIP	672K	folder	—	Mon, Aug 27, 1956, 2:25 PM
Ad Specification	60K	Microsoft Word docu...	—	Fri, Dec 30, 1994, 3:15 PM
Title page	17K	Microsoft Word docu...	—	Fri, Dec 30, 1994, 11:56 AM
Ad Claims	26K	Microsoft Word docu...	—	Fri, Dec 30, 1994, 11:48 AM
Ad Abstract	17K	Microsoft Word docu...	—	Fri, Dec 30, 1994, 11:29 AM
Ad Abstract copy	17K	Microsoft Word docu...	—	Fri, Dec 30, 1994, 11:29 AM
C5 Transmittal	34K	Microsoft Word docu...	—	Fri, Dec 30, 1994, 9:27 AM

EXHIBIT A

52 items | 259.1 MB in disk | 255.2 MB available

Name	Size	Kind	Label	Last Modified
C5 Declaration	26K	Microsoft Word docu...	—	Fri, Dec 30, 1994, 9:15 AM
Ad Drawings	476K	folder	—	Wed, Dec 28, 1994, 4:46 PM
OGS Box	85K	folder	—	Sat, Dec 10, 1994, 6:17 PM
ltr Agr 2 Buckman 8.18.94	17K	Microsoft Word docu...	—	Mon, Sep 19, 1994, 11:07 PM
ORS Golf Presentation	111K	PowerPoint document	—	Wed, Aug 10, 1994, 10:26 AM
BPLAN.MCW	204K	document	—	Fri, Jul 29, 1994, 5:16 PM
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APS Drive™

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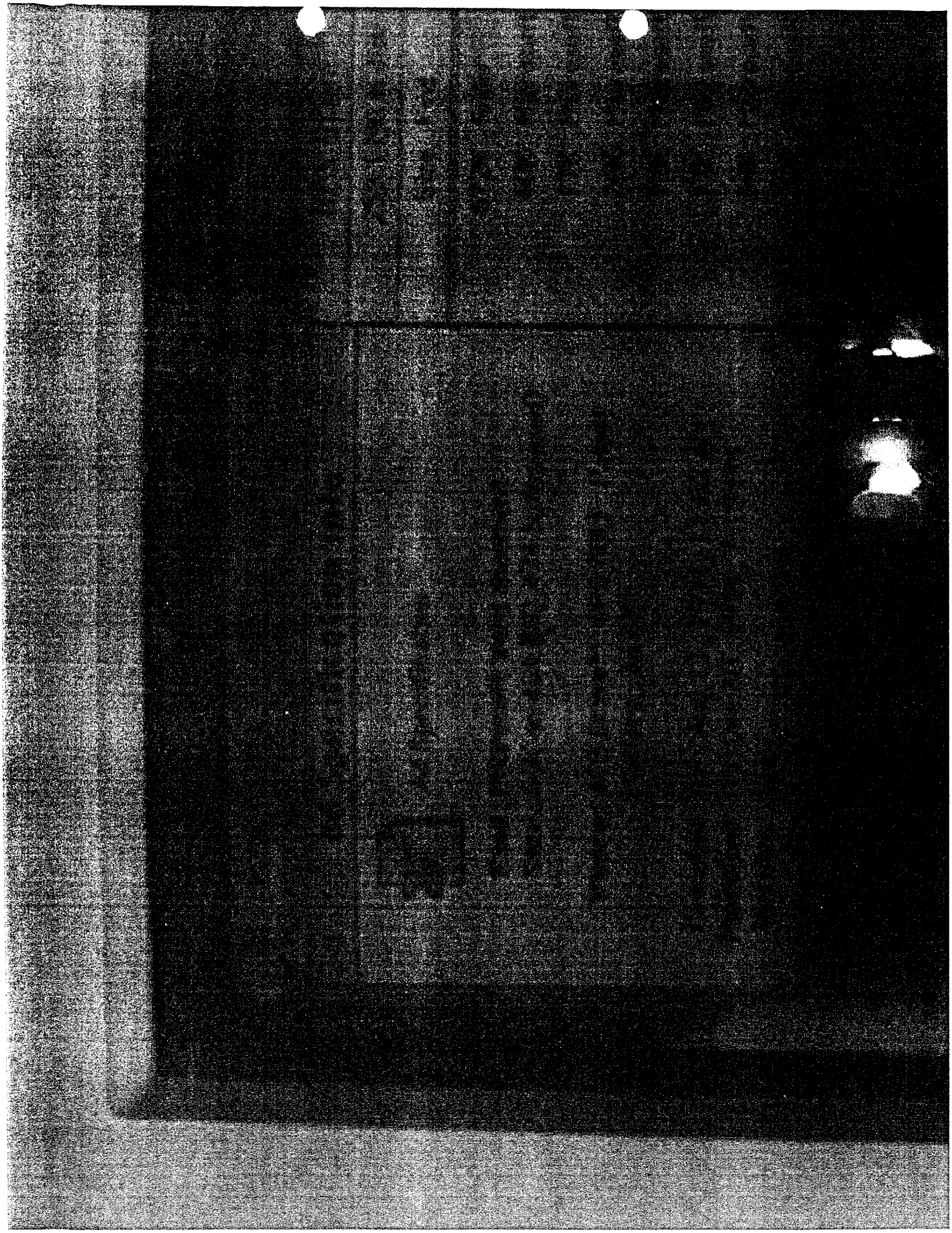

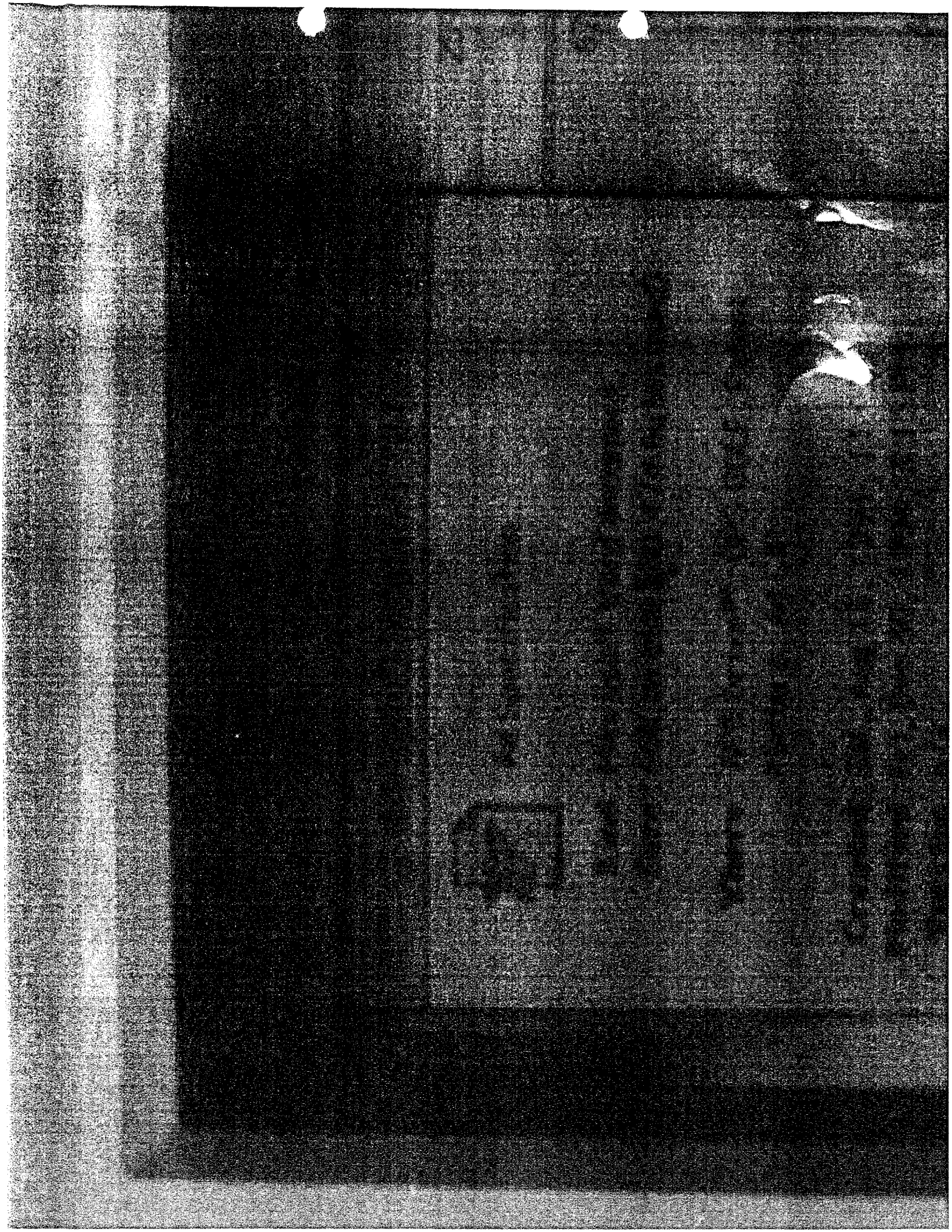

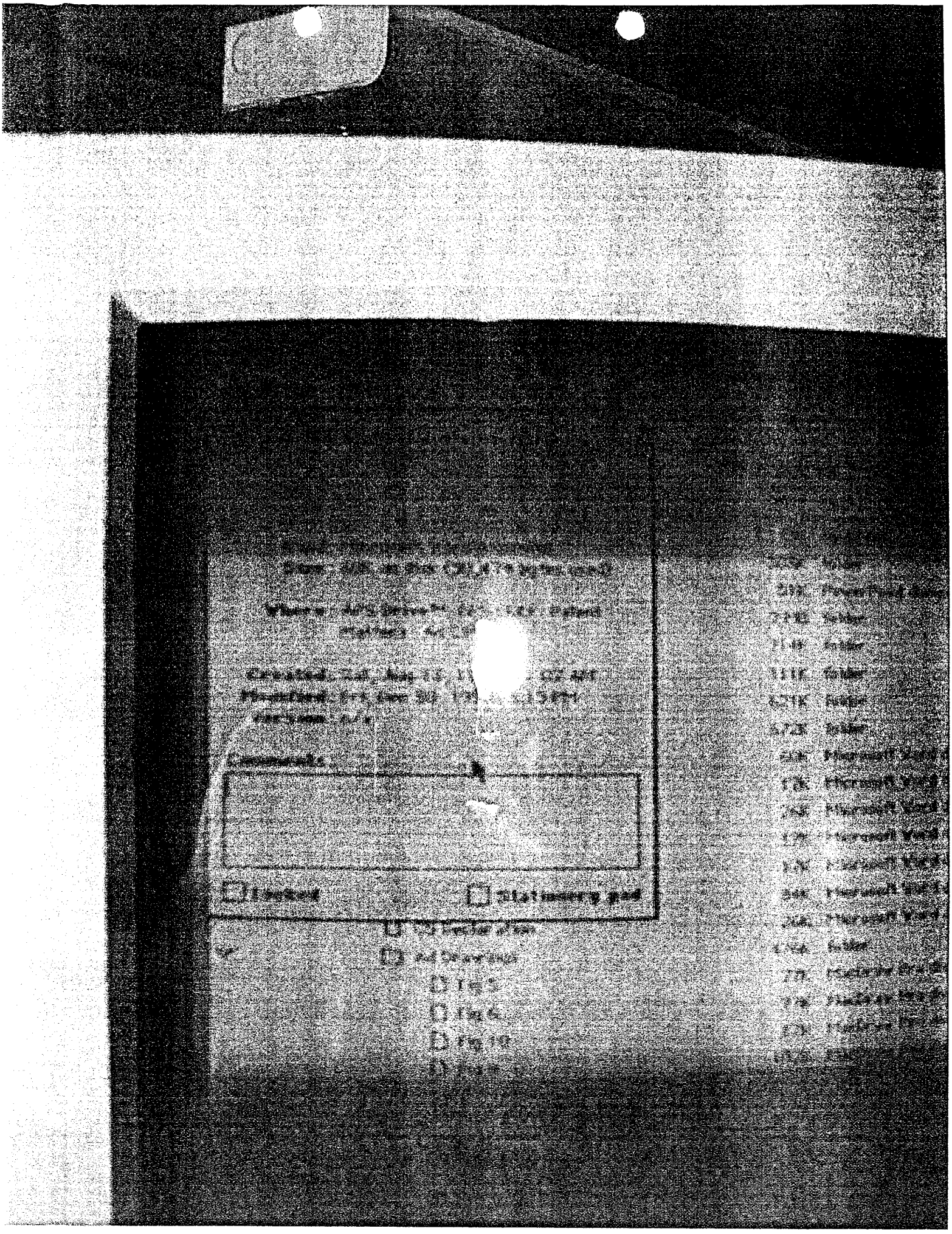

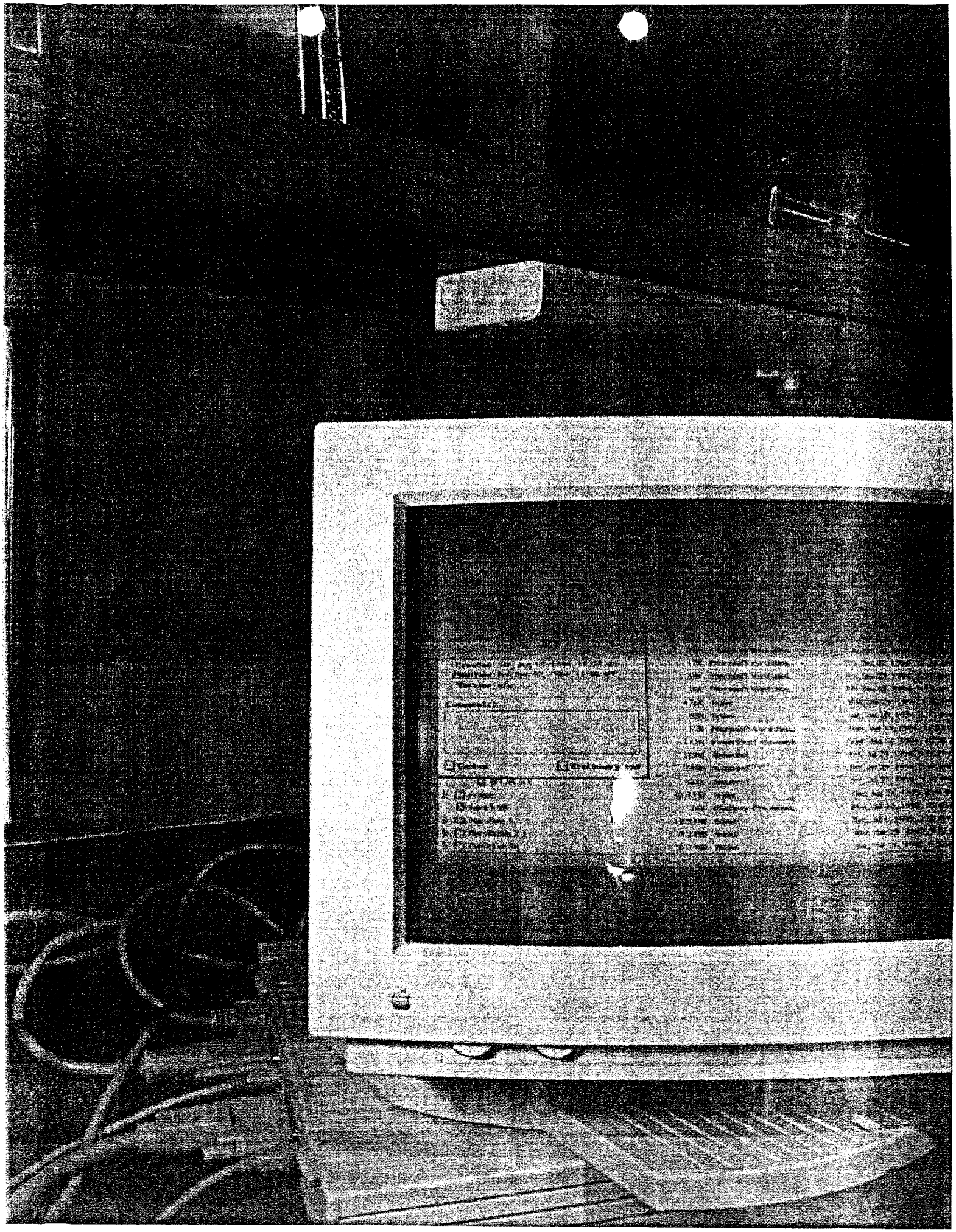

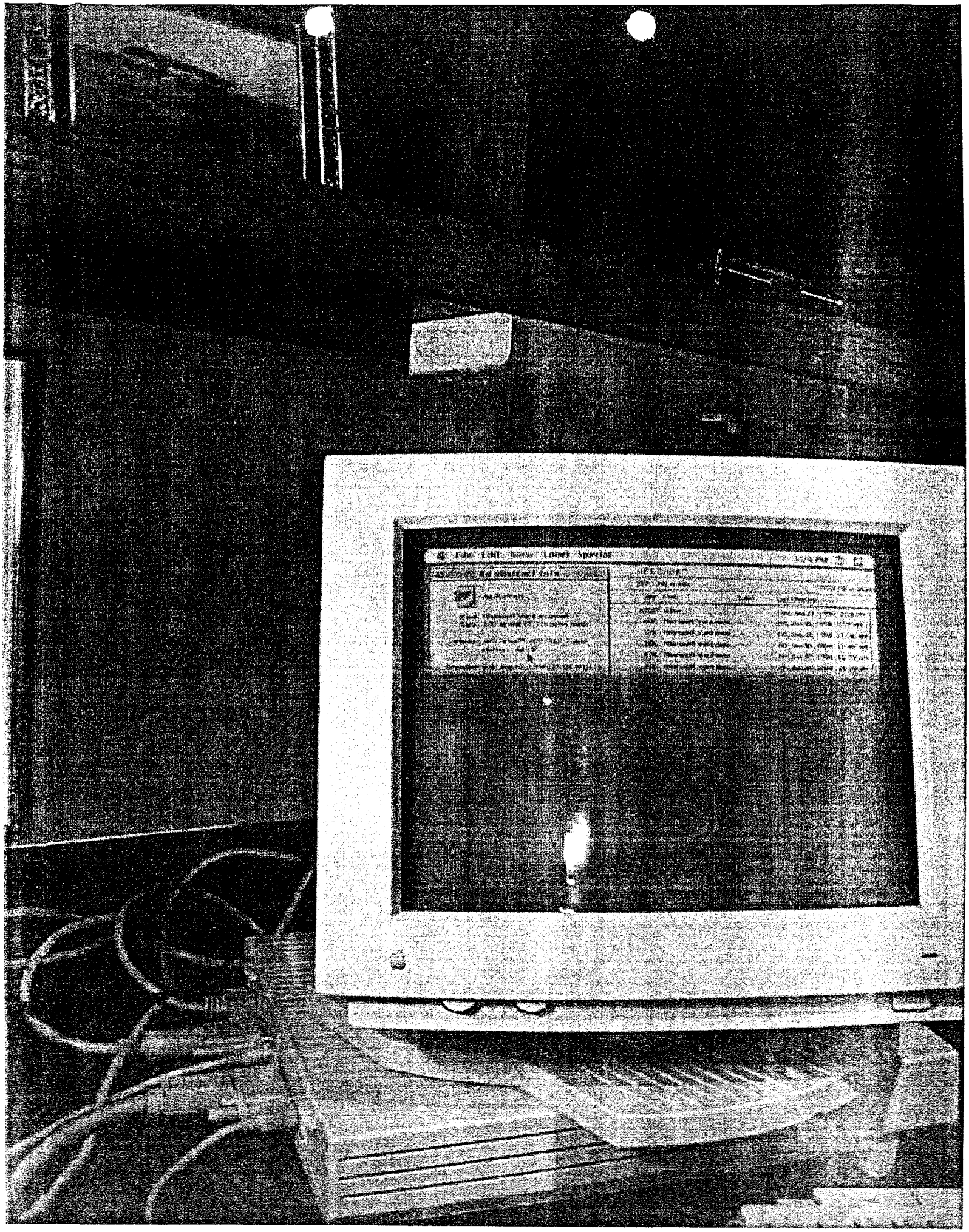

EXHIBIT B

ABSTRACT OF THE DISCLOSURE

A method, apparatus, and system is described for displaying a message to a golfer on a golf course. The system includes a number of GPS receivers attached to carts (or handheld) which display golf information and/or messages. The GPS receiver includes a display which can show the distance to the golf cup or other feature on a golf hole. The display can show a message, such as an advertising message, to the golfer. The message is shown at convenient, nonintrusive times. For example, such messages are shown at predetermined locations on the golf course such as before the first hole, after the last hole, or between holes. Additionally, such messages can be displayed using location information to determine if the receiver is moving or stopped. Finally, such messages may be displayed based on the activity of the golfer, such as scorecard input or refreshment ordering. In a preferred form, a pen input display capable of graphics is used. The system also includes a pro shop monitor where the location of each GPS receiver is shown on the golf course. The pro shop can send messages to all receivers or individual receivers.

1st Created

Aug 13, 1994

We Claim:

1. A method for displaying a message to a golfer on a golf course using the global positioning satellite system comprising the steps of:

positioning a remote global positioning satellite receiver on the golf course;

determining a position of the remote receiver on the golf course using the global positioning satellite system; and

displaying the message to the golfer at predetermined locations based on the position of the remote receiver.

2. The method of claim 1, said message comprising an advertising message to the golfer.

3. The method of claim 1, including the step of determining if the remote receiver is moving using said position and displaying said message when the remote receiver is moving.

4. The method of claim 3, the step of determining if the remote receiver is moving including the substeps of determining another position of the remote receiver and comparing said position and said other position to determine if the remote receiver is moving.

5. The method of claim 1, said message comprising a graphic depiction.

6. The method of claim 1, the displaying step including displaying a golf hole layout on said golf course at other locations on the golf course.

7. The method of claim 1, the displaying step including displaying golf information in addition to said message at other locations on the golf course.

8. The method of claim 7, said golf information comprising a scorecard and said message comprising an advertising message.

9. The method of claim 7, said golf information comprising a refreshment order page and said message comprising an advertising message.

10. The method of claim 1, including the step of determining the approximate distance of a golf ball to a feature on the golf course including the substeps of storing the location of the feature in a database, positioning the remote receiver proximate to a golf ball, and determining the distance between said stored feature location and said remote receiver position.

11. The method of claim 1, including the step of determining an error correction for the global positioning satellite system comprising the substeps of -

positioning a global positioning satellite receiver at a reference location having a known position,

determining the apparent position of the reference location using the receiver, and

calculating an error correction based on the apparent position and the known position of the reference location.

12. An apparatus for displaying a message to a golfer on a golf course using the global positioning satellite system comprising:

a global positioning receiver means for receiving signals indicative of the apparent position of the receiver means using the global positioning satellite system and positionable on the golf course;

means linked to said global positioning receiver means for determining the position of the receiver means on the golf course; and

display means for displaying the message to the golfer.

13. The apparatus of claim 12, said display means being operable for displaying a graphic representation of said message.

14. The apparatus of claim 13, said display means including digitizer means overlaying said graphic representation and a pen operable for providing inputs to said display means.

15. The apparatus of claim 12, said display means being operable for displaying a graphic representation of a golf hole to the golfer.

16. The apparatus of claim 12, said apparatus including memory means for storing different advertising messages and means for displaying different messages at different positions of the receiver means on the golf course.

17. The apparatus of claim 12, including means for communicating messages to the display.

18. The apparatus of claim 12, said display being connected to the global positioning receiver means for displaying the message at predetermined positions of the receiver means on the golf course.

19. The apparatus of claim 12, said display being operable for displaying the message based on the activity of the golfer.

20. The apparatus of claim 10, wherein said activity is a golf score input.

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EXHIBIT C

APS Drive™

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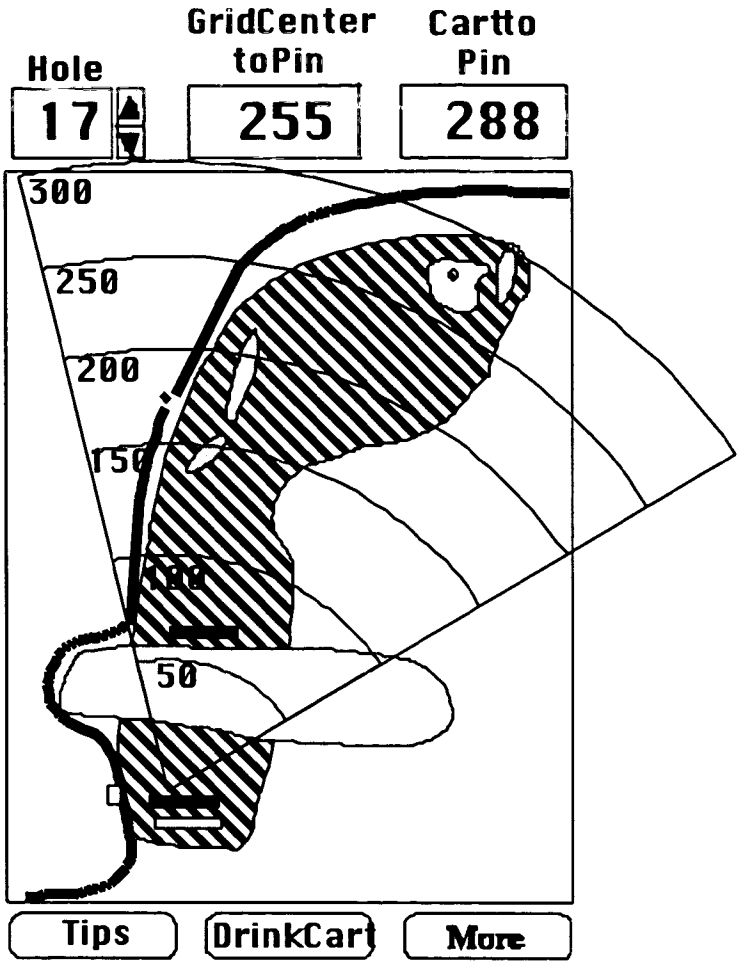

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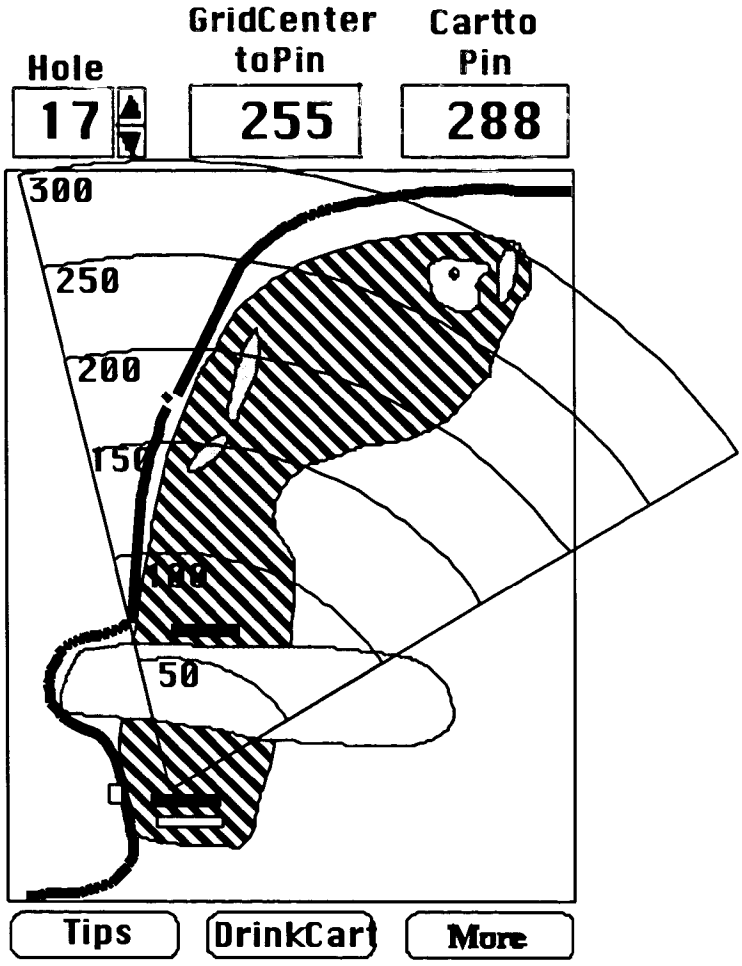
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Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHARLES D. HUSTON and DARRYL J. CORNISH

Appeal No. 2000-0947
Application No. 08/926,293

ON BRIEF

Before ABRAMS, STAAB, and NASE, Administrative Patent Judges.
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1, 5 to 18 and 21 to 26. Claim 27 has been allowed. Claims 3 and 4 have been objected to as depending from a non-allowed claim. Claim 28 has been withdrawn from consideration under 37 CFR § 1.142(b) as being drawn to a nonelected invention. Claims 2, 19 and 20 have been canceled.

We AFFIRM.

BACKGROUND

The appellants' invention relates to a method and apparatus for displaying advertising, promotion, and other types of messages on a screen used by a golfer on a golf course (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Wang et al. (Wang)	5,056,106	Oct. 8, 1991
Bonito et al. (Bonito)	5,095,430	Mar. 10, 1992
Fukushima et al. (Fukushima)	5,270,936	Dec. 14, 1993
Dudley	5,326,095	July 5, 1994
Paul	5,524,081	June 4, 1996
Dimitriadis et al. (Dimitriadis)	5,664,948	Sept. 9, 1997

Hurn, "GPS A Guide to the Next Utility," Trimble Navigation, 1989

RTCM, "RTCM Recommended Standards for Differential Navstar GPS Service," Version 2.0, January 1, 1990

The following rejections under 35 U.S.C. § 103 are before us in this appeal:

(1) Claims 1, 5 to 7, 10, 12, 13 and 16 to 18 as being unpatentable over Wang in view of Fukushima and Dudley.

(2) Claims 8, 9, 14 and 15 as being unpatentable over Wang in view of Fukushima and Dudley and further view of Bonito.

(3) Claims 11 and 21 to 26 as being unpatentable over Wang in view of Fukushima and Dudley and further view of either Hurn or RTCM.

(4) Claims 1, 5 to 7, 10, 12, 13 and 16 to 18 as being unpatentable over Fukushima in view of Wang and either one of Paul or Dimitriadis.

(5) Claims 8, 9, 14 and 15 as being unpatentable over Fukushima in view of Wang and either one of Paul or Dimitriadis and further view of Bonito.

(6) Claims 11 and 21 to 26 as being unpatentable over Fukushima in view of Wang and either one of Paul or Dimitriadis and further view of either Hurn or RTCM.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the final rejection (Paper No. 19, mailed August 20, 1998) and the answer (Paper No. 16, mailed November 8, 1999) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 15, filed August 19, 1999) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and

claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

Before turning to the merits of the actual rejections under 35 U.S.C. § 103 before us in this appeal, we believe it is appropriate to resolve some preliminary matters.

The first preliminary matter is to decide the effective filing date of the claimed subject matter so that we can properly determine if the claims under appeal would have been obvious **at the time the invention was made** to a person having ordinary skill in the art. The appellants argue throughout the brief (pp. 12-29) that the current application has a priority date of December 10, 1991 and that as of that date it would not have been obvious at the time the invention was made to a person having ordinary skill in the art to have combined the applied prior (especially Wang and Fukushima) to arrive at the claimed subject matter. The examiner determined (answer, p. 11) that the claimed subject matter has a filing date of December 30, 1994 since there is no

support for the claimed subject matter in the earlier-filed, related parent applications.

We agree with the examiner that the claimed subject matter under appeal is only entitled to the filing date of the instant application (i.e., December 30, 1994). While the appellants have claimed benefit of two earlier-filed applications (i.e., Application No. 08/313,718 filed September 22, 1994 and Application No. 07/804,368 filed December 10, 1991), the appellants are not entitled to the benefit of those earlier-filed applications under 35 U.S.C. § 120 since those earlier-filed applications do not disclose the currently claimed subject matter in the manner provided by the first paragraph of 35 U.S.C. § 112. Specifically, those earlier-filed applications do not disclose displaying an advertising message to a golfer as set forth in the claims under appeal.

The other preliminary matter is to decide whether or not Fukushima and Dimitriadis are non-analogous art to the claimed subject matter. The test for non-analogous art is first whether the art is within the field of the inventor's endeavor and, if not, whether it is reasonably pertinent to the problem with which the inventor was involved. In re Wood, 599 F.2d 1032, 1036, 202

USPQ 171, 174 (CCPA 1979). A reference is reasonably pertinent if, even though it may be in a different field of endeavor, it logically would have commended itself to an inventor's attention in considering his problem because of the matter with which it deals. In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1061 (Fed. Cir. 1992). In the present instance, we are informed by the appellants' originally filed specification that the invention is particularly directed to displaying advertising messages to golfers based on the current position of the golfer as determined by a global positioning satellite system (GPS). Fukushima teaches using GPS to locate the current position of a vehicle and thus falls at least into the latter category of the Wood test, and logically would have commended itself to an artisan's attention in considering the appellants' problem. Dimitriadis teaches using GPS to locate the current position of a vehicle to provide location specific advertising information and thus falls at least into the latter category of the Wood test, and logically would have commended itself to an artisan's attention in considering the appellants' problem. Thus, we conclude that both Fukushima and Dimitriadis are analogous art.

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a case of obviousness.

See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A case of obviousness is established when the teachings of the prior art itself would appear to have suggested the claimed subject matter to one of ordinary skill in the art. See In re Bell, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993). In considering the question of the obviousness of the claimed invention in view of the prior art relied upon, we are guided by the basic principle that the question under 35 U.S.C. § 103 is not merely what the references expressly teach but what they would have suggested to one of ordinary skill in the art at the time the invention was made. See Merck & Co., Inc. v. Biocraft Laboratories, Inc., 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). That is, the question of obviousness cannot be approached on the basis that an artisan having ordinary skill would have known only what they read in the references, because such artisan is presumed to know something about the art apart from what the references disclose. See In re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962). It is not necessary that suggestion or motivation be found within the four corners of the references themselves; a conclusion of obviousness may be made from common knowledge and common sense of the person of ordinary skill in the

art without any specific hint or suggestion in a particular reference. See In re Bozek, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969). Further, in an obviousness assessment, skill is presumed on the part of the artisan, rather than the lack thereof. In re Sovish, 769 F.2d 738, 226 USPQ 771 (Fed. Cir. 1985). We are bound to consider the disclosure of each reference for what it fairly teaches one of ordinary skill in the art, including not only the specific teachings, but also the inferences which one of ordinary skill in the art would reasonably have been expected to draw therefrom. See In re Boe, 355 F.2d 961, 148 USPQ 507 (CCPA 1966); and In re Preda, 401 F.2d 825, 159 USPQ 342 (CCPA 1968).

With this as background, we turn to the rejections under 35 U.S.C. § 103 before us in this appeal.

Rejection (1)

We sustain the rejection of claims 1, 5 to 7, 10, 12, 13 and 16 to 18 under 35 U.S.C. § 103 as being unpatentable over Wang in view of Fukushima and Dudley.

Claim 1 reads as follows:

> A method for displaying an advertising message to a golfer on a golf course using the global positioning satellite system comprising the steps of:
> positioning a remote global positioning satellite receiver on the golf course;
> storing a plurality of predetermined locations on the golf course;
> determining a position of the remote receiver on the golf course using the global positioning satellite system; and
> displaying the advertising message to the golfer on the golf course based on the position of the remote receiver relative to the predetermined locations on the golf course.

Wang's invention is directed to a method and apparatus which employs a spread-spectrum based radiolocation system, using hand-held receiver units and fixed-position reference transmitters, to determine distance and direction between a golfer and key locations on a golf course, such as the distance and direction to a particular pin. The plurality of timing reference transmitters which are located throughout the vicinity of the golf course broadcast a spread-spectrum ranging signal consisting of a radio-frequency carrier directly modulated by a periodic pseudo-noise (PN) coded or similar sequence. Each transmitter broadcasts at the same RF signal but a unique PN-coded sequence is assigned to each transmitter. Golfers are provided with the hand-held receiving unit which receives the

transmitter spread-spectrum signals and which synchronizes to the spread-spectrum signals in order to obtain range estimates to a selected set of reference transmitters. The hand-held receivers also include memory to store the coordinates of the reference transmitters and the pin positions and other reference points for each hole on the golf course, which are either pre-loaded into memory or transmitted (as modulating data) with the ranging signal. Each hand-held unit also includes a digital processor which incorporates a hyperbolic location algorithm to compute the hand-held unit position based on the estimated ranges to the selected transmitters and the reference transmitter coordinates. The distance and direction from the current position to the pin or other selected reference points is then displayed via an appropriate medium on the hand-held unit.

Fukushima teaches (column 1, lines 45-47) that an object of his invention is "to provide a simplified navigation apparatus which is small in size, low in cost and easy to use." Fukushima's simplified navigation apparatus comprises: a GPS receiver for outputting coordinate data representing the absolute current location of a vehicle; a reading means for reading from a recording medium a plurality of geographical point data groups

contained therein, each data group comprising point name data paired with coordinate data; a display means for displaying display information signals supplied thereto; a display point setting means for detecting coordinate data on a given geographical point from among the plurality of geographical point data groups and setting the coordinate data for the display target point; a reading control means for controlling the reading means so as to retrieve from the recording medium the point name data paired with the coordinate data on the display target point; a computing means for obtaining the data on the distance and direction to the display target point based on the coordinate data both on the current position and on the display target point; and a display control means for supplying the display means with the point name data, distance data and direction data on the display target point as the display information signals. Fukushima further teaches (column 6, lines 46-49) that his simplified navigation apparatus may be mounted not only on passenger cars and trucks but also on bicycles and motorcycles; it may even be carried by a person as a portable navigation apparatus.

Dudley teaches the use of a golf information system which automatically provides golfers with reference position and distance information from a number of points on a particular golf course hole. In one embodiment, radio frequency identification tags would be positioned along a golf cart path, for example, buried underneath the path, and a reading system carried by the golf cart would output an interrogation signal which would activate the tags causing the tags to output a coded signal which would be received by the reading unit, which would retrieve information about that location from memory and output it to the golfer. Dudley discloses that the system can further be used to display advertising messages and to provide golf course management features such as monitoring cart usage and speed of play. Dudley teaches (column 2, lines 33-37, and column 7, lines 14-17) that various types of information besides position and yardage could also be outputted by his system including advertising messages displayed at preselected times and that the look-up table contained in EPROM 90 and RAMs 92 and 94 for microcontroller 88 can also include advertising messages which are activated by particular tags 24.

After the scope and content of the prior art are determined, the differences between the prior art and the claims at issue are to be ascertained. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966).

Based on our analysis and review of Wang and claim 1, it is our opinion that the differences are (1) positioning a remote global positioning satellite receiver on the golf course; (2) determining a position of the remote receiver on the golf course using a global positioning satellite system; and (3) displaying an advertising message to the golfer on the golf course based on the position of the remote receiver relative to predetermined locations on the golf course.

Next, the level of ordinary skill in the pertinent art must be resolved. Six factors are relevant to a determination of the level of ordinary skill: educational level of the inventor, type of problems encountered in the art, prior art solutions, rapidity of innovation, sophistication of technology, and educational level of active workers in the field. Environmental Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 697, 218 USPQ 865, 868-69 (Fed. Cir. 1983), cert. denied, 464 U.S. 1043 (1984) and

Orthopedic Equipment Co. v. All Orthopedic Appliances, 707 F.2d 1376, 1382, 217 USPQ 1281, 1285 (Fed. Cir. 1983). However, a specific finding of a particular level of skill is not always necessary where, as here, the prior art itself reflects an appropriate level. Chore-Time Equip., Inc. v. Cumberland, 713 F.2d 774, 779 n.2, 218 USPQ 673, 676 n.2 (Fed. Cir. 1983).

With regard to the above-noted differences, the examiner reached the conclusion (final rejection, p. 5) that it would have been obvious **at the time the invention was made** (i.e., December 30, 1994) to a person having ordinary skill in the art to have modified Wang's system to utilize a global positioning satellite receiver on the golf course to determine the position of the remote receiver on the golf course using a global positioning satellite system in view of Fukushima's teachings and to display advertising messages to the golfer on the golf course based on the position of the remote receiver in view of Dudley's teachings. We agree.

The argument advanced by the appellants (brief, pp. 11-23) and the 37 CFR § 1.132 Declaration of Rick Horne (the Horne declaration), dated September 4, 1997, are unpersuasive for the

following reasons. First, the Horne declaration and the appellants' argument related thereto are directed to whether or not it would have been obvious in **December 1991** to a person having ordinary skill in the art to have combined the teachings of Wang and Fukushima in the manner set forth by the examiner in all the rejections before us in this appeal. However, since the issue in all the rejections before us in this appeal is whether or not it would have been obvious in **December 1994**[1] to a person having ordinary skill in the art to have combined the teachings of Wang and Fukushima, the Horne declaration and the appellants' argument related thereto are not entitled to any weight.

Second, it is our opinion that the person of ordinary skill in the art is not a golfer, a golf professional and/or golf course manager as proffered by the appellants (brief, p. 12). In our view, the applied prior art properly reflects the appropriate level and clearly demonstrates the level to be higher than a golfer, a golf professional and/or golf course manager.

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[1] See our discussion, supra, regarding the effective filing date of the claimed subject matter.

Third, the applied prior art does provide sufficient motivation for a person having ordinary skill in the art at the time the invention was made (i.e., December 1994) to have arrived at the claimed subject matter. In that regard, while there must be some teaching, reason, suggestion, or motivation to combine existing elements to produce the claimed device, it is not necessary that the cited references or prior art specifically suggest making the combination (see B.F. Goodrich Co. v. Aircraft Braking Systems Corp., 72 F.3d 1577, 1583, 37 USPQ2d 1314, 1319 (Fed. Cir. 1996) and In re Nilssen, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988)). Rather, the test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In our view, the combined teachings of Wang, Fukushima and Dudley would have made it obvious at the time the invention was made to a person having ordinary skill in the art to (1) replace Wang's radiolocation system to determine distance from the hand-held receiver to key locations on the golf course with a GPS receiver to determine distance from the GPS receiver to key locations on the golf course based on Fukushima's teaching that a GPS system

presents a simplified navigation apparatus which is small in size, low in cost and easy to use; and (2) display advertising messages to the golfer on the golf course based on the position of the remote receiver based on Dudley's teachings for the self-evident advantages thereof.

For the reasons set forth above, the decision of the examiner to reject claim 1 under 35 U.S.C. § 103 as being unpatentable over Wang in view of Fukushima and Dudley is affirmed.

The appellants have grouped claims 1, 5 to 7, 10, 12, 13 and 16 to 18 as standing or falling together.[2] Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 5 to 7, 10, 12, 13 and 16 to 18 fall with claim 1. Thus, it follows that the decision of the examiner to reject claims 5 to 7, 10, 12, 13 and 16 to 18 under 35 U.S.C. § 103 as being unpatentable over Wang in view of Fukushima and Dudley is also affirmed.

[2] See page 7 of the appellants' brief.

Rejection (2)

Dependent claims 8, 9, 14 and 15 have not been separately argued by the appellants. In fact, the appellants have grouped claims 8, 9, 14 and 15 as standing or falling with the claims subject to rejection (1).[3] Accordingly, these claims will be treated as falling with their parent claims. See In re Young, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991); In re Nielson, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987); and In re Wood, 582 F.2d 638, 642, 199 USPQ 137, 140 (CCPA 1978). Thus, it follows that the decision of the examiner to reject claims 8, 9, 14 and 15 under 35 U.S.C. § 103 as being unpatentable over Wang in view of Fukushima and Dudley and further view of Bonito is also affirmed.

Rejection (3)

We sustain the rejection of claims 11, 21 to 23, 25 and 26 under 35 U.S.C. § 103 as being unpatentable over Wang in view of Fukushima and Dudley and further view of either Hurn or RTCM. We will not sustain the rejection of claim 24 under 35 U.S.C. § 103

[3] See page 7 of the appellants' brief.

as being unpatentable over Wang in view of Fukushima and Dudley and further view of either Hurn or RTCM.

Claim 21 reads as follows:

> A system for displaying an advertising message to a golfer on a golf course using a global positioning satellite system comprising:
> differential correction means positioned at a known location for receiving signals from the global positioning satellite system, for determining an apparent location, and for transmitting a correction based on the difference between the known location and the apparent location;
> global positioning receiver means transportable for accompanying the golfer during play of golf on the golf course for receiving signals indicative of the apparent position of the receiver means on the golf course using the global positioning satellite system and including a communication link for receiving corrections from the differential correction means, the global positioning receiver means being operable for determining an accurate position on the golf course based on the apparent position and the corrections; storage means storing a plurality of predetermined accurate positions on the golf course;
> means linked to said global positioning receiver means and said storage means for determining if the position of the receiver means coincides with one of the plurality of predetermined accurate positions; and
> display means coupled to the global positioning receiver means for displaying the advertising message to the golfer if the position of the receiver means coincides with one of the predetermined accurate positions of the global positioning receiver means on the golf course.

The examiner determined (final rejection, p. 9) that the claimed subject matter would have been obvious at the time the

invention was made to a person having ordinary skill in the art to combine the teachings of Wang, Fukushima and Dudley as set forth in rejection (1) above and to further incorporate differential processing in the GPS system to increase accuracy as taught by either Hurn or RTCM. We agree.

The appellants argument (brief, pp. 28-29) pointing out deficiencies of each applied reference on an individual basis is unpersuasive since nonobviousness cannot be established by attacking the references individually when the rejection is predicated upon a combination of prior art disclosures. See In re Merck & Co. Inc., 800 F.2d 1091, 1097, 231 USPQ 375, 380 (Fed. Cir. 1986). In that regard, we note that the applied prior art clearly teaches the benefits (e.g., greater accuracy) of "differential GPS" over "GPS."

For the reasons set forth above, the decision of the examiner to reject claim 21 under 35 U.S.C. § 103 as being unpatentable over Wang in view of Fukushima and Dudley and further view of either Hurn or RTCM is affirmed.

The appellants have grouped claims 21 to 23, 25 and 26 as standing or falling together.[4] Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 22, 23, 25 and 26 fall with claim 21. Dependent claim 11 has not been separately argued by the appellant. In fact, the appellants have grouped claim 11 as standing or falling with the claims subject to rejection (1).[5] Accordingly, claim 11 will be treated as falling with its parent claim 1. Thus, it follows that the decision of the examiner to reject claims 11, 22, 23, 25 and 26 under 35 U.S.C. § 103 as being unpatentable over Wang in view of Fukushima and Dudley and further view of either Hurn or RTCM is also affirmed.

Claim 24 adds to parent claim 21 the limitation "said communications link being operable for receiving an advertising message and for sending said received message to the display means for display."

The appellants argue (brief, pp. 29-30) that the limitation of claim 24 is not suggested by the applied prior art. We agree. In fact, the examiner's response (answer, p. 14) to this argument

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[4] See page 7 of the appellants' brief.

[5] See page 7 of the appellants' brief.

is that Paul clearly shows/suggests the limitation of claim 24. However, since Paul is not applied in this ground of rejection, the examiner has failed to present a case of obviousness with respect to claim 24.

For the reasons set forth above, the decision of the examiner to reject claim 24 under 35 U.S.C. § 103 as being unpatentable over Wang in view of Fukushima and Dudley and further view of either Hurn or RTCM is reversed.

Rejection (4)

We sustain the rejection of claims 1, 5 to 7, 10, 12, 13 and 16 to 18 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and either one of Paul or Dimitriadis.

The teachings of Fukushima and Wang have been set forth above in our discussion of rejection (1).

Paul[6] teaches (see abstract) a golf information and management system utilizing the Global Positioning System, a

[6] In our view, Paul is the closest piece of prior art (from the prior art before us in this appeal) to the claimed invention.

satellite based, radio navigation system where clocks signals are transmitted. This satellite system provides at least four satellites 2 "in view" at all time. A golf cart 12 or player receives the signals from the four satellites, compares the clocked signals and an on-board computer reads the clocked signals and determines the position, in three dimension, of the receivers (velocity of the receivers is also available). There is a fixed base location 8 on the golf course that also receives the satellite signals and transmits a differential correction signal, via another channel, to the golf cart or player, where the computer determines the position of the cart or player to within a yard. The computer may be pre-loaded with golf course information, such as pin position, hazard positions, etc., where the computer via a graphical display 18 communicates to the player exact distances to the pre-loaded known physical features of the golf course, and displays information needed by the player to determine his next shot, including a video presentation of a golf pro's suggestions. In addition, the cart may communicate with the base station where the base station can track each cart or player on the course. With such information, detecting slow players to allow better course management, and also allows the base station to output information to a cart to show the players

ahead so as not to hit into other groups and to send messages to carts to urge faster play to send out other type messages. Paul further teaches (column 8, lines 15-21) that the base unit performs other functions in addition to broadcasting the differential corrections in that it provides a mechanism for broadcasting messages to all carts or any specific cart. The broadcasts can include notices from the clubhouse, weather alerts, **advertising**, leader board updates, etc.

Dimitriadis' invention delivers data and information including advertising information to a receiving device. In accordance with his invention, data which can include **advertising** information is transmitted to a receiving device and then it is collected and stored within the receiving device. The receiving device intermittently presents stored information to a listener. The receiving device can provide multiple presentations of advertising information which was transmitted to the receiving device one time by radio signal. Presentation of the advertising information at the receiving device may be triggered by a variety of functions. Stored advertising information entries may be presented, for example, by reference to a time schedule, to current receiving device location, or to receiving device events

such as power-up. Because the advertising information is broadcast only one time and presented multiple times, the advertiser incurs less expense for each advertisement presentation, there being multiple advertisement presentations for one radio signal transmission. As shown in Figure 1 of Dimitriadis, a global position system (GPS) satellite 50 provides transmission 52 to determine the location of a GPS receiver carried by vehicle 10 (the GPS receiving device is incorporated into travel information device 40). Thus, travel information device 40 receives several channels of information. Voice broadcast 22 provided by radio broadcast system 20 provides a stream of analog voice information. Data broadcast 26 provides further advertising information, e.g., digital, voice or text information, to be captured by device 40. Third, the GPS transmission 52 provides current vehicle location. As shown in Figure 3 of Dimitriadis, the travel information device 40 includes a display 100 for advertisement presentation of text type data.

Based on our analysis and review of Fukushima and claim 1, it is our opinion that the differences are: (1) positioning a remote global positioning satellite receiver on a golf course;

(2) storing a plurality of predetermined locations on the golf course; (3) determining a position of the remote receiver on the golf course using the global positioning satellite system; and (4) displaying an advertising message to a golfer on the golf course based on the position of the remote receiver relative to the predetermined locations on the golf course.

With regard to the above-noted differences, the examiner reached the conclusion (final rejection, p. 10) that it would have been obvious **at the time the invention was made** (i.e., December 30, 1994) to a person having ordinary skill in the art to have utilized Fukushima's apparatus for a golfer on a golf course so that the position of the GPS receiver on the golf course would be determined using a global positioning satellite system in view of Wang's teachings and to display advertising messages at predetermined geographic locations of the GPS receiver in view of the teachings of either Paul or Dimitriadis. We agree.

The appellants presents the same argument with regard to this ground of rejection as they presented with regard to rejection (1). We find this argument unpersuasive for the

reasons expressed above in our discussion of rejection (1). Additionally, we note that the appellants belief (brief, pp. 26-27) that Paul does not suggest providing advertising messages to players on a golf course is wrong since Paul specifically teaches (column 8, lines 15-21) that the broadcasts from the base unit to a cart can include notices from the clubhouse, weather alerts, **advertising**, leader board updates, etc.

For the reasons set forth above, the decision of the examiner to reject claim 1 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and either one of Paul or Dimitriadis is affirmed.

The appellants have grouped claims 1, 5 to 7, 10, 12, 13 and 16 to 18 as standing or falling together.[7] Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 5 to 7, 10, 12, 13 and 16 to 18 fall with claim 1. Thus, it follows that the decision of the examiner to reject claims 5 to 7, 10, 12, 13 and 16 to 18 under 35 U.S.C. § 103 as being unpatentable over

[7] See page 7 of the appellants' brief.

Fukushima in view of Wang and either one of Paul or Dimitriadis is also affirmed.

Rejection (5)

Dependent claims 8, 9, 14 and 15 have not been separately argued by the appellants. In fact, the appellants have grouped claims 8, 9, 14 and 15 as standing or falling with the claims subject to rejection (4).[8] Accordingly, these claims will be treated as falling with their parent claims. Thus, it follows that the decision of the examiner to reject claims 8, 9, 14 and 15 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and either one of Paul or Dimitriadis and further view of Bonito is also affirmed.

Rejection (6)

We sustain the rejection of claims 11, 21 to 23, 25 and 26 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and Dimitriadis and further view of either Hurn or RTCM. We sustain the rejection of claims 11 and 21 to 26 under

[8] See page 7 of the appellants' brief.

35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and Paul and further view of either Hurn or RTCM. We will not sustain the rejection of claim 24 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and Dimitriadis and further view of either Hurn or RTCM.

The examiner determined (final rejection, p. 12) that the claimed subject matter would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the teachings of Fukushima, Wang and either Paul or Dimitriadis as set forth in rejection (4) above and to further incorporate differential processing in the GPS system to increase accuracy as taught by either Hurn or RTCM. We agree.

The appellants argument (brief, pp. 28-29) pointing out deficiencies of each applied reference on an individual basis is unpersuasive since nonobviousness cannot be established by attacking the references individually when the rejection is predicated upon a combination of prior art disclosures. See In re Merck & Co. Inc., 800 F.2d at 1097, 231 USPQ at 380. In that regard, we note that the applied prior art clearly teaches the

benefits (e.g., greater accuracy) of "differential GPS" over "GPS."

For the reasons set forth above, the decision of the examiner to reject claim 21 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and Paul or Dimitriadis and further view of either Hurn or RTCM is affirmed.

The appellants have grouped claims 21 to 23, 25 and 26 as standing or falling together.[9] Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 22, 23, 25 and 26 fall with claim 21. Dependent claim 11 has not been separately argued by the appellant. In fact, the appellants have grouped claim 11 as standing or falling with the claims subject to rejection (4).[10] Accordingly, claim 11 will be treated as falling with its parent claim 1. Thus, it follows that the decision of the examiner to reject claims 11, 22, 23, 25 and 26 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and Paul or

[9] See page 7 of the appellants' brief.

[10] See page 7 of the appellants' brief.

Dimitriadis and further view of either Hurn or RTCM is also affirmed.

The appellants further argue (brief, pp. 29-30) that the limitation of claim 24[11] is not suggested by the applied prior art. We agree with respect to the rejection including Dimitriadis but disagree with respect to the rejection including Paul. The examiner's response (answer, p. 14) to this argument is that Paul clearly shows/suggests the limitation of claim 24.[12]

Since Paul is not applied in the ground of rejection including Dimitriadis, the examiner has failed to present a case of obviousness with respect to claim 24. Accordingly, the decision of the examiner to reject claim 24 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and Dimitriadis and further view of either Hurn or RTCM is reversed.

In our view, Paul clearly teaches his communications link being operable for receiving an advertising message and for

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[11] The limitation that claim 24 adds to parent claim 21 is set forth above in our discussion of rejection (3).

[12] The appellants did not file a reply brief to respond to this determination of the examiner.

sending the received message to the display means for display and thus the appellants argument fails to establish any error in the examiner's rejection of claim 24 based upon Fukushima in view of Wang and Paul and further view of either Hurn or RTCM. Accordingly, the decision of the examiner to reject claim 24 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and Paul and further view of either Hurn or RTCM is affirmed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 5 to 18, 21 to 23, 25 and 26 under 35 U.S.C. § 103 is affirmed; the decision of the examiner to reject claim 24 as being unpatentable over Wang in view of Fukushima and Dudley and further view of either Hurn or RTCM is reversed; the decision of the examiner to reject claim 24 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and Dimitriadis and further view of either Hurn or RTCM is reversed; and the decision of the examiner to reject claim 24 under 35 U.S.C. § 103 as being unpatentable over Fukushima in view of Wang and Paul and further view of either Hurn or RTCM is affirmed.

Since at least one rejection of each of the appealed claims has been affirmed, the decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

NEAL E. ABRAMS)
Administrative Patent Judge)
)
)
)
LAWRENCE J. STAAB) BOARD OF PATENT
Administrative Patent Judge) APPEALS
) AND
) INTERFERENCES
)
)
JEFFREY V. NASE)
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United States Court of Appeals for the Federal Circuit

02-1048
(Serial no. 08/926,293)

IN RE CHARLES D. HUSTON and DARRYL J. CORNISH

Charles D. Houston, Thompson & Knight, L.L.P., of Austin, Texas, argued for appellants.

Sydney O. Johnson, Jr., Associate Solicitor, Office of the Solicitor, Patent and Trademark Office, of Arlington, Virginia, argued for appellee. With him on the brief were John M. Whealan, Solicitor; and William LaMarca, Associate Solicitor. Of counsel was Stephen Walsh, Associate Solicitor.

Appealed from: United States Patent and Trademark Office
Board of Patent Appeals and Interferences

United States Court of Appeals for the Federal Circuit

02-1048
(Serial No. 08/926,293)

IN RE CHARLES D. HUSTON and DARRYL J. CORNISH

DECIDED: October 17, 2002

Before MAYER, Chief Judge, DYK, and PROST, Circuit Judges.

Opinion for the court filed by Circuit Judge DYK. Dissenting opinion filed by Circuit Judge PROST.

DYK, Circuit Judge.

Charles D. Huston and Darryl J. Cornish ("appellants") appeal the decision of the United States Board of Patent Appeals and Interferences ("Board") affirming the final rejection of claims 1, 5-18, and 21-26 of U.S. Application Serial No. 08/926,293 ("the '293 application"). Ex parte Huston, No. 00-0947 (Bd. Pat. App. & Int. July 31, 2001). Because the Board properly concluded that the claims are not entitled to the filing date of an earlier filed application and would have been obvious to one of ordinary skill in the art at the time of invention, we affirm.

BACKGROUND

The claimed subject matter of the '293 application is directed to a method and apparatus for displaying an advertising message to a golfer on a screen based on the golfer's current position as determined by a global positioning satellite ("GPS") system. A GPS system is a constellation of satellites that circle the earth transmitting signals that are used to determine the location of a device receiving the signal.

Huston filed two earlier applications, U.S. Application Serial No. 07/804,368 ("the '368 application"), on December 10, 1991, and a continuation-in-part ("CIP") of the '368 application, United

States Application Serial No. 08/313,718 ("the '718 application"), on September 22, 1994. The '718 application ultimately issued as U.S. Patent No. 5,364,093 ("the '093 patent"). Appellants contend that the application at issue, the '293 application, is entitled to the benefit of the filing date of the '368 application, making the effective filing date December 10, 1991, rather than December 30, 1994. The United States Patent and Trademark Office ("PTO") contends that the '293 application should benefit only from its own December 30, 1994, filing date.

The '093 patent[1] relates to a method and system for determining and displaying the approximate distance between a golf ball and a target on the golf course such as a golf cup or a hazard. The invention of the '093 patent utilizes a GPS receiver positioned near the golf ball to determine the position of the golf ball and, based on that position, calculates the distance to a golf cup or a hazard. The specification describes an embodiment of the invention that includes a bi-directional radio system capable of receiving error correction information and "other information." '093 patent, col. 4, ll. 63-65.

Claims 1, 5-18, and 21-26 of the '293 application are at issue on appeal. Claims 1, 21, and 24 are representative. Claim 1 provides:

1. A method for displaying an advertising message to a golfer on a golf course using the global positioning satellite system comprising the steps of:
positioning a remote global positioning satellite receiver on the golf course;
storing, a plurality of predetermined locations on the golf course;
determining, a position of the remote receiver on the golf course using the global positioning satellite system; and
displaying the advertising message to the golfer on the golf course based on the position of the remote receiver relative to the predetermined locations on the golf course.

'293 application, claim 1 (emphasis added).

Claim 21 adds the limitation of a differential correction means for determining and transmitting an error correction. The differential correction means enables the GPS system to calculate the location of the golfer more accurately. Claim 21 provides:

21. A system for displaying an advertising message to a golfer on a golf course using a global positioning satellite system comprising:
differential correction means positioned at a known location for receiving signals from the global positioning, satellite system, for determining an apparent location, and for transmitting a correction based on the difference between the known location and the apparent location;
global positioning receiver means transportable for accompanying the golfer during play of golf on the golf course for receiving signals indicative of the apparent position of the

> receiver means on the golf course using the global positioning satellite system and including a communication link for receiving corrections from the differential correction means, the global positioning receiver means being operable for determining an accurate position on the golf course based on the apparent position and the corrections;
>
> storage means storing a plurality of predetermined accurate positions on a golf course;
>
> means linked to said global positioning receiver means and said storage means for determining if the position of the receiver means coincides with one of the plurality of predetermined accurate positions; and
>
> display means coupled to the global positioning receiver means for displaying the advertising message to the golfer if the position of the receiver means coincides with one of the predetermined accurate positions of the global positioning receiver means on the golf course.

'293 application, claim 21 (emphasis added).

Claim 24, which depends from claim 21, requires a communications link to receive and transmit the advertising message: "The system of claim 21, said communications link being operable for receiving an advertising message and for sending said received message to the display means for display." '293 application, claim 24.

PROCEEDINGS BELOW

The examiner rejected claims 1, 5-18, and 21-26 as obvious under 35 U.S.C. § 103(a), relying on various combinations of eight references: U.S. Patent No. 5,056,106 to Wang et al. ("Wang"); U.S. Patent No. 5,095,430 to Bonito et al. ("Bonito"); U.S. Patent No. 5,095,430 to Fukushima et al. ("Fukushima"); U.S. Patent No. 5,326,095 to Dudley ("Dudley"); U.S. Patent No. 5,524,081 to Paul ("Paul"); U.S. Patent No. 5,664,948 to Dimitriadis et al. ("Dimitriadis"); Jeff Hurn, "GPS: A Guide to the Next Utility," Trimble Navigation, 1989 ("Hurn"); and "RTCM Recommended Standards for Differential Navistar GPS Service," Version 2.0, Jan. 1, 1990 ("RTCM").

An initial question was whether the Paul and Dimitriadis patents should be considered as prior art under 35 U.S.C. § 102(e) against the '293 application.[2] The application that ultimately issued as Paul was filed May 2, 1994, and the application that ultimately issued as Dimitriadis was filed October 11, 1994. Thus, if the '293 application were entitled to a filing date of December 10, 1991, the filing date of the '368 application, then Paul and Dimitriadis would not be prior art under section 102(e). The examiner determined that appellants were not entitled to the benefit of the filing date of the '368 application because the '368 application did not disclose the currently claimed subject matter in the manner provided by the first paragraph of 35 U.S.C. § 112, as required by 35 U.S.C. § 120.[3]

Specifically, the examiner determined that the '368 application did not disclose the display of an advertising message to a golfer as set forth in the claims on appeal. The examiner accordingly considered the Paul and Dimitriadis patents to be prior art.

A brief description of the eight prior art references relied on by the examiner follows. Wang is directed to a method and apparatus that employs a spread-spectrum based radiolocation system. Wang, col. 1, ll. 13-14. The Wang system uses hand-held receiver units and fixed-position reference transmitters to determine distance and direction between a golfer and key locations on a golf course, for example, the distance and direction to a particular pin. Id., col. 2, ll. 12-35. Fukushima teaches the use of a GPS system to locate the current position of a vehicle and "provide[s] a simplified navigation apparatus which is small in size, low in cost and easy to use." Fukushima, col. 1, ll. 46-47. Dudley discloses a receiver positioned on a golf course used with tags positioned underground at predetermined locations on the golf course and displays advertising messages to a golfer (having the receiver) based on the golfer's position relative to the predetermined location of the tags. Dudley, col. 2, ll. 4-41. Bonito discloses marking a computer with a lighting pen to determine the distance between a golfer's location and a selected point. Bonito, col. 7, ll. 60-65. Paul discloses a golf information and management system that uses GPS to determine the position of a GPS receiver on a golf course, Paul, col. 5, ll. 41-43, 61-63, where a map of the course is stored at the base station, id., col. 6, ll. 61-62, and displays advertising messages to a golfer, id., col. 8, ll. 18-20. Dimitriadis teaches using GPS to locate the current position of a vehicle to provide location-specific advertising information, Dimitriadis, col. 2, ll. 61-67, wherein the GPS system determines the location of a GPS receiver, id., col. 5, ll. 31-34, and where advertising messages may be presented when the vehicle passes a predetermined location such as a geographic landmark, id., col. 3, ll. 19-28, col. 4, ll. 32-36. The Hurn article discloses using "differential correction" to calculate errors occurring during the transmission of a satellite signal and teaches that, given its ability to determine errors, differential GPS achieves more accurate measurements than conventional GPS. The Radio Technical Commission for Maritime Services ("RTCM") reference also discloses that differential GPS is a technique that significantly improves the accuracy of GPS.

The examiner made the following rejections:

(1) claims 1, 5-7, 10, 12, 13, and 16-18 as being unpatentable under 35 U.S.C. § 103(a) over Wang in view of Fukushima and Dudley;
(2) claims 8, 9, 14, and 15 as being unpatentable under 35 U.S.C. § 103(a) over Wang in view of Fukushima and Dudley and in further view of Bonito;
(3) claims 11 and 21-26 as being unpatentable under 35 U.S.C. § 103(a) over Wang in view of Fukushima and Dudley and in further view of either Hurn or RTCM;
(4) claims 1, 5-7, 10, 12, 13, and 16-18 as being unpatentable under 35 U.S.C. § 103(a) over Fukushima in view of Wang and either one of Paul or Dimitriadis;
(5) claims 8, 9, 14, and 15 as being unpatentable under 35 U.S.C. § 103(a) over Fukushima in view of Wang and either one of Paul or Dimitriadis and in further view of Bonito, and
(6) claims 11 and 21-26 as being unpatentable under 35 U.S.C. § 103(a) over Fukushima in view of Wang and either one of Paul or Dimitriadis and in further view of either Hurn or RTCM.

To rebut the examiner's obviousness findings, appellants filed a declaration under 37 C.F.R. § 1.132 from Rick Horne, Vice President of Operations of ProShot Golf, Inc., the exclusive licensee of Huston's '093 patent. Horne stated that, as of December 1991, it would not have been obvious to combine the Wang and Fukushima patents:

> What is lacking from Wang and Fukushima is anything that would have taught, suggested, or motivated me or one of ordinary skill in the art in December 1991 to modify the golf course ranging system of Wang by adapting the GPS-vehicle positioning system of Fukushima to become a GPS-based or a differential GPS-based golf distance determining method and system as described and claimed in the present [application].

Horne Decl. ¶ 15 (emphasis added).

In an office action dated November 26, 1997, the examiner considered the Horne declaration and found it unpersuasive: "The declaration of Rick Horne . . . is insufficient to overcome the rejection of claims 1, 3-18 and 21-26 based upon Wang et al. in view of Fukushima et al. and Dudley."

The examiner issued final rejections of claims 1, 3-18, and 21-26 in a Final Office Action dated August 20, 1998.

Huston appealed to the Board. The Board held that all claims had been properly rejected "[s]ince at least one rejection of each of the appealed claims has been affirmed." Huston, slip op. at 33.

First, the Board agreed with the examiner that Huston's application was not entitled to the December 10, 1991, filing date of the '368 application under 35 U.S.C. § 120 because it found that the '368 application did not disclose the currently claimed element of "displaying an advertising message" to a golfer in a manner consistent with the first paragraph of section 112:

> We agree with the examiner that the claimed subject matter under appeal is only entitled to the filing date of the instant application (i.e., December 30, 1994). While the appellants

> have claimed the benefit of two earlier-filed applications . . . the appellants are not entitled to the benefit of those earlier-filed applications under 35 U.S.C. § 120 since those earlier-filed applications do not disclose the currently claimed subject matter in the manner provided by the first paragraph of 35 U.S.C. § 112. Specifically, those earlier-filed applications do not disclose displaying an advertising message to a golfer as set forth in the claims under appeal.

Id., slip op. at 5 (emphasis added).

The Board then considered the Horne declaration and sua sponte found that it was "not entitled to any weight," because the declaration is

> directed to whether or not it would have been obvious in December 1991 to a person having ordinary skill in the art to have combined the teachings of Wang and Fukushima in the manner set forth by the examiner in all the rejections before us in this appeal. However, since the issue in all the rejections before us in this appeal is whether or not it would have been obvious in December 1994 to a person having ordinary skill in the art to have combined the teachings of Wang and Fukushima, the Horne declaration and the appellants' argument related thereto are not entitled to any weight.

Huston, slip op. at 15.

The Board determined the level of ordinary skill in the pertinent art. The Board found that "the person of ordinary skill in the art is not a golfer, a golf professional and/or golf course manager . . . . In our view, the applied prior art properly reflects the appropriate level and clearly demonstrates the level to be higher than a golfer, a golf professional and/or golf course manager." Id.

Turning to the merits of the obviousness rejection of claim 1, the Board analyzed the prior art and determined that

> the combined teachings of Wang, Fukushima, and Dudley would have made it obvious at the time the invention was made to a person having ordinary skill in the art to (1) replace Wang's radiolocation system to determine distance from the hand-held receiver to key locations on the golf course with a GPS receiver to determine distance from the GPS receiver to key locations on the golf course based on Fukushima's teaching that a GPS system presents a simplified navigation apparatus which is small in size, low in cost and easy to use; and (2) display advertising messages to the golfer on the golf course based on the position of the remote receiver based on Dudley's teachings for the self-evident advantages thereof.

Id. at 16-17 (emphases added). Thus, the Board identified two key elements of claim 1: (1) the use of a GPS system on a golf course to determine the position of a golfer; and (2) the use of such system to transmit location-specific advertising messages to a golfer. The Board found the first element, the use of GPS on a golf course, obvious in light of the combination of Wang and Fukushima. Later in its

opinion, the Board separately found that the use of GPS on a golf course was fully disclosed by a single prior art reference, the Paul patent. Indeed, the Board noted that "Paul is the closest piece of prior art (from the prior art before us on appeal) to the claimed invention." Id. at 22 n.6. The Board found the second element, positional advertising, obvious in light of Dudley's teaching of positional advertising on a golf course using a radio frequency system (rather than GPS).

The Board accordingly affirmed the rejection of claims 1, 5-7, 10, 12, 13, and 16-18 as unpatentable over Wang in view of Fukushima and Dudley. Huston, slip op. at 17. The Board treated dependent claims 8, 9, 14, and 15 as standing or falling with their parent claims and affirmed the rejection of those claims as well.[4] Id. at 18.

The Board also sustained the rejection of claims 11, 21-23, 25, and 26 as unpatentable over Wang in view of Fukushima and Dudley in further view of either Hurn or RTCM:

> The examiner determined . . . that the claimed subject matter would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the teachings of Wang, Fukushima and Dudley as set forth in rejection (1) above and to further incorporate differential processing in the GPS system to increase accuracy as taught by either Hurn or RTCM. We agree.

Id. at 19-20. The Board did not sustain the rejection of claim 24 over Wang in view of Fukushima and Dudley in further view of either Hurn or RTCM (though, as noted below, it rejected that claim on alternative grounds). Id. at 18-19.

The Board then turned to the examiner's alternative rejection of the claims. The Board sustained the examiner's rejection of claims 1, 5-7, 10, 12, 13, and 16-18 as being unpatentable under 35 U.S.C. § 103(a) over Fukushima in view of Wang and either Paul or Dimitriadis. As noted, the Board found that the application was not entitled to the benefit of the earlier filing date, and, therefore, Paul and Dimitriadis, which were both filed between 1991 and 1994, were properly considered as prior art under 35 U.S.C. § 102(e). The Board sustained the rejection:

> [T]he examiner reached the conclusion . . . that it would have been obvious at the time the invention was made (i.e., December 30, 1994) to a person having ordinary skill in the art to have utilized Fukushima's apparatus for a golfer on a golf course so that the position of the GPS receiver on the golf course would be determined using a global positioning satellite system in view of Wang's teachings and to display advertising messages at predetermined geographic locations of the GPS receiver in view of the teachings of either Paul or Dimitriadis. We agree.

Huston, slip op. at 26. The Board noted that "Paul specifically teaches . . . that the broadcasts from the base unit to a cart can include notices from the clubhouse, weather alerts, advertising, leader board updates, etc." Id. at 27. The Board further found that claims 1, 5-7, 10, 12, 13, and 16-18 stand or fall together, id., and that dependent claims 8, 9, 14, and 15 stand or fall with their parent claims, id. at 28, and accordingly sustained the rejection as to these claims.

The Board then sustained the examiner's rejection of claims 11 and 21-26 as unpatentable over Fukushima in view of Wang and Paul and in further view of either Hurn or RTCM:

> The examiner determined . . . that the claimed subject matter would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the teachings of Fukushima, Wang and either Paul or Dimitriadis . . . and to further incorporate differential processing in the GPS system to increase accuracy as taught by either Hurn or RTCM. We agree.

Huston, slip op. at 29. The Board noted that "the applied prior art clearly teaches the benefits (e.g., greater accuracy) of 'differential GPS' over 'GPS.'" Id. at 29-30.

The Board sustained the rejection of claim 24 as being unpatentable over Fukushima in view of Wang and Paul and in further view of either Hurn or RTCM:

> In our view, Paul clearly teaches his communication link being operable for receiving an advertising message and for sending the received message to the display means for display and thus the appellants' argument fails to establish any error in the examiner's rejection of claim 24 based upon Fukushima in view of Wang and Paul and further view of either Hurn or RTCM.

Huston, slip op. at 31-32.

The Board concluded that "[s]ince at least one rejection of each of the appealed claims has been affirmed, the decision of the examiner is affirmed." Id. at 33.

Huston timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

STANDARD OF REVIEW

"The ultimate determination of whether an invention would have been obvious under 35 U.S.C. § 103(a) is a legal conclusion based on underlying findings of fact." In re Kotzab, 217 F.3d 1365, 1369, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000). We review the Board's ultimate conclusion of obviousness without deference, and we review the Board's underlying factual determinations for substantial evidence. In re Gartside, 203 F.3d 1305, 1316, 53 USPQ2d 1769, 1776 (Fed. Cir. 2000). The scope

and content of the prior art are reviewed for substantial evidence. Id.

DISCUSSION

I

The first question is whether substantial evidence supports the Board's determination that the proper date for the obviousness analysis is December 1994, rather than December 1991, the filing date of the '368 application. We hold that it does.

Appellants contend that they are entitled to the benefit of the December 10, 1991, filing date of the '368 application. In order "[t]o gain the benefit of the filing date of an earlier application under 35 U.S.C. § 120, [a later-filed application] must comply with the written description requirement of 35 U.S.C. § 112." Lockwood v. Am. Airlines Inc., 107 F.3d 1565, 1571, 41 USPQ2d 1961, 1965-66 (Fed. Cir. 1997). The examiner concluded that "[t]he instant application has a filing date of 12/30/94 with respect to the display of advertising messages based on position since there is no support for such in the earlier-filed, related parent files." The Board agreed:

> We agree with the examiner that the claimed subject matter under appeal is only entitled to the filing date of the instant application (i.e., December 30, 1994). While the appellants have claimed the benefit of two earlier-filed applications . . . the appellants are not entitled to the benefit of those earlier-filed applications under 35 U.S.C. § 120 since those earlier-filed applications do not disclose the currently claimed subject matter in the manner provided by the first paragraph of 35 U.S.C. § 112. Specifically, those earlier-filed applications do not disclose displaying an advertising message to a golfer as set forth in the claims under appeal.

Huston, slip op. at 5 (emphasis added).

We agree with the examiner and with the Board. The '368 application did not disclose the location-specific transmission of advertising messages to a golfer using GPS. The specification states that the invention of the '368 application relates to "a method and apparatus which could accurately and quickly determine the position of a ball and the distance between the ball and features on the hole being played, such as the golf cup on the green, the preceding cart, or a hazard . . . ." The disclosure further describes the purpose of the invention as "determining the approximate distance between a golf ball and a target on the golf course such as the golf cup. In particular, the method and apparatus use a global positioning satellite receiver positioned near the golf ball to determine the approximate location of the golf ball." The specification further describes "option buttons" that

> allow the player to access "tips" (e.g., caddie hints), "drinks," and "more" respectively. . . . The "more" menu allows the player to access other options, such as a scorecard where the player can enter scores for the round for each player or food service. If desired, the scores can be transmitted over the radio network and downloaded to base station 12 for handicap input and is particular[ly] useful during tournaments. The "drink" button allows the player to order drinks . . . .

The specification continues:

> the packet radio system 20 is conventional, and includes modem 34, radio interface 36, and radio 38 (including an antenna, not shown). The radio system 20 is bi-directional in that it can receive error correction and other information as well as transmit present position back to the base station 12."

'093 patent, col. 4, ll. 60-65 (emphasis added).

Relying on In re Stryker, 435 F.2d 1340, 1341-42, 168 USPQ 372, 373 (CCPA 1971), appellants argue that the '368 application discloses the "genus" of transmitting "information," and that the '293 application is directed to the particular "species" of transmitting "advertising information." While the specification discloses the transmission of distance information and help messages to a golfer based on the golfer's position as determined by GPS, it does not in fact disclose the transmission of generic "other information" to a golfer based on the golfer's position as determined by GPS. Thus, even if advertising could be viewed as a subset of "other information," the transmission of "other information" based on position as determined by GPS was not disclosed, and in particular the transmission of positional advertising was not disclosed. "Entitlement to a filing date does not extend to subject matter which is not disclosed, but would be obvious over what is expressly disclosed. It extends only to that which is disclosed." Lockwood, 107 F.3d at 1571-72, 41 USPQ2d at 1966. Huston's parent application disclosure fails to support the presently claimed "displaying an advertising message" based on position, and the effective filing date is therefore December 30, 1994.

It follows that the Board properly considered the Paul and Dimitriadis patents as prior art under 35 U.S.C. § 102(e). Paul has an effective filing date of May 2, 1994, and Dimitriadis has an effective filing date of October 11, 1994.

It also follows that the Board properly rejected the Horne declaration. In his declaration, Horne repeatedly referred to December 1991 and made clear that he was addressing whether it would have been obvious in December 1991 to combine the Wang and Fukushima prior art references:

> What is lacking from Wang and Fukushima is anything that would have taught,

> suggested, or motivated me or one of ordinary skill in the art in December 1991 to modify the golf course ranging system of Wang by adapting the GPS-vehicle positioning system of Fukushima to become a GPS-based or a differential GPS-based golf distance determining method and system as described and claimed in the present U.S. Application Serial No. 08/366/994.

Horne Decl. ¶ 15 (emphasis added).

> Contrary to the examiner's assertion, the use of spread spectrum code modulated signals in Wang does not suggest that a GPS-based system, such as the system in Fukushima, could be successfully substituted for the ground-based system of Wang. Spread spectrum code modulated signals were well-known in December 1991 and were simply one available technique for multiple access communications.

Horne Decl. ¶ 16 (emphasis added).[5]

Thus, we find that substantial evidence supports the Board's determination of the effective filing date and its rejection of the Horne declaration.

II

The second question is whether the Board's obviousness determinations should be sustained.

A. Claim 1

In essence, the Board conducted its obviousness determination in two steps, corresponding to the two key elements it identified in claim 1. First, it identified a set of references that taught the use of a GPS system on a golf course to determine the location of a golfer.[6] Second, it identified prior art that taught the transmission of positional advertising, i.e., the display of an advertising message to the golfer on the golf course based on the position of a remote receiver relative to predetermined locations on the golf course.

1. The use of a GPS system on a golf course

The Board found the use of a GPS system on a golf course obvious in light of the combination of the Wang and Fukushima patents:

> [I]t would have been obvious at the time the invention was made (i.e., December 30, 1994) to a person having ordinary skill in the art to have modified Wang's system to utilize a global positioning satellite receiver on the golf course to determine the position of the remote receiver on the golf course using a global positioning satellite system in view of Fukushima's teachings.

Huston, slip op. at 14.

Appellants argue that there was no motivation or suggestion to combine Wang and Fukushima,

that the proposed modification would change the operating principle of the claimed invention, that there was no reasonable expectation of success in view of the teachings of Wang, and that the claim limitations were not taught or suggested by the proposed combination. We need not address these arguments because, later in its opinion, the Board identified a single piece of prior art, Paul, that fully disclosed the use of GPS on a golf course to determine the position of a golfer. Noting that Paul "is the closest piece of prior art (from the prior art before us on appeal) to the claimed invention," Huston, slip op. at 22 n.6, the Board fully described the teachings of Paul:

> Paul teaches (see abstract) a golf information and management system utilizing the Global Positioning System . . . . A golf cart 12 or player receives the signals from the four satellites, compares the clocked signals and an on-board computer reads the clocked signals and determines the position, in three dimension[s], of the receivers (velocity of the receivers is also available). There is a fixed base location 8 on the golf course that also receives the satellite signals and transmits a differential correction signal, via another channel, to the golf cart or player, where the computer determines the position of the cart or player to within a yard. The computer may be pre-loaded with golf course information, such as pin position, hazard positions, etc., where the computer via a graphical display 18 communicates to the player exact distances to the pre-loaded known physical features of the golf course, and displays information needed by the player to determine his next shot, including a video presentation of a golf pro's suggestions. In addition, the cart may communicate with the base station where the base station can track each cart or player on the course.

Id., at 22-23 (emphases added). Thus, the only limitation of claim 1 lacking in Paul was positional advertising," i.e., the transmission of location-specific advertising based on the position of a golf cart relative to predetermined locations on a golf course. Id.

Thus, the Board recognized that a single piece of prior art fully taught the use of a GPS system on a golf course to determine a golfer's position. As a result, appellants' arguments challenging the Board's combination of Wang and Fukushima to show that the use of GPS on a golf course was obvious are baseless in view of Paul.[7]

We note that the Board's decision could have been clearer, in that it could have simply cited Paul as prior art teaching the use of GPS on a golf course, rather than combining Wang and Fukushima to establish that premise. Nonetheless, the Board's reasoning can be readily discerned, and the fact that the Board found the use of GPS on a golf course obvious in light of the combination of Wang and Fukushima, rather than in light of Paul itself, does not compel reversal.

We conclude that the Board did not err in concluding that the use of a GPS system on a golf

course to determine the position of a golfer would have been obvious in light of the prior art at the time of invention.[8]

2. Positional advertising

The only remaining question as to claim 1 is whether it would have been obvious to one of ordinary skill to combine a system that uses GPS on a golf course with the transmission of positional advertising. The Board found that this missing element is disclosed in Dudley:

> Dudley teaches the use of a golf information system which automatically provides golfers with reference position and distance information from a number of points on a particular golf course hole. . . . Dudley discloses that the system can further be used to display advertising messages and to provide golf course management features such as monitoring golf cart usage and speed of play. Dudley teaches that various types of information besides position and yardage could also be outputted by his system including advertising messages to be displayed at preselected times and that the look-up table contained in EPROM 90 and RAMs 92 and 94 for microcontroller 88 can also include advertising messages which are activated by particular tags 24.

Huston, slip op. at 12 (emphasis added). The Board noted that:

> [I]t would have been obvious at the time the invention was made (i.e., December 30, 1994) to a person having ordinary skill . . . to display advertising messages to the golfer on the golf course based on the position of the remote receiver in view of Dudley's teachings.

Id. at 14, and further noted:

> In our view, [it] . . . would have [been] obvious at the time the invention was made to a person having ordinary skill in the art to . . . display advertising messages to the golfer on the golf course based on the position of the remote receiver based on Dudley's teachings for the self-evident advantages thereof.

Id. at 16-17 (emphasis added).

To establish obviousness, the Board must do more than identify the elements in the prior art. There must also be "some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead the individual to combine the relevant teachings of the references." In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) (emphasis added). "The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (emphasis added).

Appellants complain that the Board did not specifically find a suggestion or motivation to combine the references in the prior art, except through its reliance on common knowledge and

common sense. They urge that In re Lee, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002), requires that we vacate and remand to the Board. We disagree.

Lee involved a situation in which the Board relied on its "general knowledge to negate patentability." In re Lee, 277 F.3d at 1345, 61 USPQ2d at 1435. In such circumstances we held that such "knowledge must be articulated and placed on the record." Id. The court further explained "that 'deficiencies of the cited references cannot be remedied by the Board's general conclusions about what is 'basic knowledge' or 'common sense.'" Id. at 1344, 61 USPQ2d at 1434-35 (quoting In re Zurko, 258 F.3d 1379, 1385, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001)) (citation omitted).

Here we confront quite a different situation. Despite the Board's passing reference to "common knowledge and common sense," Huston, slip op. at 7, the Board in fact has not relied on its own general knowledge. Rather, it has found the motivation in the prior art references themselves. Its conclusions are cryptic, but they are supported by the record. The Paul reference indeed is quite specific in describing the disadvantages of the radio frequency system used in Dudley:

> The system uses embedded radio frequency (RF) tags to "mark" a course. The RF tags are detected by a cart mounted unit which then displays yardage to pin and yardage to hazards on an alphanumeric screen. The system has the following limitations: the screen is not dynamic, the system provides limited information beyond simple yardage differentials, and the entire information content is based on relative position and not actual location on the course. The golf course operator must commit to an extensive survey and installation of related markers and equipment before the system can be demonstrated.

Paul, col. 2, ll. 41-51. Thus, Paul provides the motivation to substitute a GPS system for the radio system of Dudley. Under such circumstances the Board's decision must be affirmed despite its failure to specifically cite the Paul reference for this purpose.

> As the Supreme Court stated,
>
> While we may not supply a reasoned basis for the agency's action that the agency itself has not given, SEC v. Chenery Corp., 332 U.S. 194, 196 (1947), we will uphold a decision of less than ideal clarity if the agency's path may reasonably be discerned." Colorado Interstate Gas Co. v. FPC, 324 U.S. 581, 595 (1945).

Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc., 419 U.S. 281, 285-86 (1974). See also Greyhound Corp. v. ICC, 668 F.2d 1354, 1362-63 (D.C. Cir. 1981) ("'[T]his court has recognized judicial indulgence toward administrative action to the extent of affirming an order when an agency's

path, though convoluted, can be discerned.'") (quoting Midwestern Gas Transmission Co. v. FERC, 589 F.2d 603, 615 (D.C. Cir. 1978) (per curiam)). This is a situation where the Board's "path may reasonably be discerned." In short, we find that substantial evidence supports the Board's determination that there is a sufficient motivation to combine Dudley with a GPS system on a golf course, and hold that the Board's reasoning is sufficient. [9]

Accordingly, we uphold the Board's decision and affirm the Board's obviousness rejection of claim 1.

A. Claims 21 and 24

We also affirm the rejection of claims 21 and 24. The Board properly concluded that the additional features of claims 21 and 24 were obvious in light of the prior art. Claim 21 adds the limitation of a differential correction means for determining and transmitting an error correction. The Board agreed with the examiner that it would have been obvious to incorporate differential processing in a GPS system to increase accuracy as taught by either Hurn or RTCM:

> The examiner determined that the claimed subject matter would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the teachings of Wang, Fukushima and Dudley as set forth . . . above and to further incorporate differential processing in the GPS system to increase accuracy as taught by either Hurn or RTCM. We agree.

Huston, slip op. at 19-20. The Board further noted that "the applied prior art clearly teaches the benefits (e.g., greater accuracy) of 'differential GPS' over 'GPS.'" Id. at 20. We agree. See Hurn at 58-59 ("GPS is by far the most accurate global navigation system ever devised. But even its incredible accuracy can be boosted using a technique called 'differential GPS.' With it, GPS can achieve measurement accuracies of better than a meter. . . . Differential GPS measurements can be much more accurate than standard GPS measurements.").

Claim 24, which depends from claim 21, requires a communication link to receive and transmit the advertising message. The Board sustained the examiner's rejection of claim 24:

> In our view, Paul clearly teaches his communication link being operable for receiving an advertising message and for sending the received message to the display means for display and thus the appellants' argument fails to establish any error in the examiner's rejection of claim 24 based upon Fukushima in view of Wang and Paul and further view of either Hurn or RTCM.

Huston, slip op. at 31-32. We agree with the Board that the additional limitation of a communications link is disclosed in Paul and therefore affirm this rejection.

CONCLUSION

Because we find that the invention of claim 1 would have been obvious to one skilled in the art in December 1994 in view of Wang, Fukushima, and Dudley; that claim 21 would have been obvious in light of Wang, Fukushima, and Dudley, and either Hurn or RTCM; and that claim 24 would have been obvious in light of Fukushima, Wang, and Paul and either Hurn or RTCM, we affirm.

COSTS

No costs.

AFFIRMED

United States Court of Appeals for the Federal Circuit

02-1048
(Serial No. 08/926,293)

IN RE CHARLES D. HUSTON and DARRYL J. CORNISH

PROST, Circuit Judge, dissenting-in-part.

I respectfully dissent from that part of the majority opinion affirming the Board's rejection of claim 1 as unpatentable under 35 U.S.C. § 103(a). The majority concludes that substantial evidence supports the Board's determination that sufficient motivation existed to combine Dudley with a GPS system on a golf course, stating, "this is a situation where the Board's 'path may reasonably be discerned.'" Ante at 21 (quoting Colo. Interstate Gas Co. v. FPC, 324 U.S. 581, 595 (1945)). Rather than discerning the Board's path, however, I respectfully submit that the majority has charted an analytical course of its own. Because "we may not supply a reasoned basis for the agency's action that the agency itself has not given," Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc., 419 U.S. 281, 285-86 (1974) (citing SEC v. Chenery Corp., 332 U.S. 194, 196 (1947)), I dissent. I would remand that portion of the Board's decision holding claim 1 of the '293 application unpatentable as

obvious so that the Board could fully set forth the reasons why one of ordinary skill in the art would have been motivated to select and combine the relevant prior art references.

The Board sustained the examiner's rejection of claim 1 as obvious on two specific, alternative grounds. Under both of these stated rationales, the Board concluded that the combination of Fukushima and Wang taught the use of a GPS system to determine the location of a receiver on a golf course. Ex parte Huston, No. 00-0947, slip op. 14, 26 (Bd. Pat. App. & Int. July 21, 2001). The Board then cited Dudley and, alternatively, Paul or Dimitriadis as teaching the display of advertising messages based on the receiver's position. Id. The Board found the motivation to combine these two sets of references in the prior art itself. According to the Board, "the combined teachings of Wang, Fukushima and Dudley would have made it obvious at the time the invention was made to a person having ordinary skill in the art" to (1) replace Wang's radiolocation system with GPS, because Fukushima taught the advantages of GPS's simplified, inexpensive navigation system, id. at 16-17; and (2) display advertising messages to a golfer on the course based on the position of the receiver, because Dudley taught "the self-evident advantages" thereof, id. at 17. Similarly, the Board found appellants' argument that insufficient motivation existed to combine Fukushima, Wang, and either Paul or Dimitriadis "unpersuasive for the reasons expressed above in our discussion of" the examiner's rejection under Wang, Fukushima, and Dudley. Id. at 26-27. Additionally, the Board noted that Paul specifically taught the broadcasting of advertisements to golf carts, id. at 27.

The majority does not affirm the Board on either of these two grounds. Instead, it concludes that "Paul provides the motivation to substitute a GPS system for the radio system of Dudley." The majority concedes that the Board never "cite[d] the Paul reference for this purpose," and the majority's sole support for its conclusion is a passage from the Paul reference that does not appear in the Board's opinion. Ante at 21. Nevertheless, the majority maintains that its opinion does nothing more than "discer[n]" the Board's "cryptic" conclusions, id. at 20-21. With all due respect, I cannot agree that the Board's conclusions as to the combination of Paul and Dudley are "cryptic"—they are nonexistent. As this court held in In re Sang-Su Lee, 277 F.3d 1338, 1345-46, 61 USPQ2d 1430, 1435 (Fed. Cir. 2002), "review of administrative decisions must be made on the grounds relied on by the agency. 'If those grounds are inadequate or improper, the court is powerless to affirm the administrative action by

substituting what it considers to be a more adequate or proper basis.'" Id. (quoting SEC v. Chenery Corp., 332 U.S. 194, 196 (1947)). Where, as here, the Board's stated grounds for affirming the examiner's rejection of claim 1 as unpatentable are clearly insufficient, this court, in my view, is compelled to remand.

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[1] Both the appellant and the Board erroneously cited the '093 patent, rather than the '368 application, when discussing whether the '293 application should benefit from the December 10, 1991, filing date. See 35 U.S.C. § 120 (2000) (priority for benefit of filing date derives from earlier filed application). Because there is no material discrepancy between the patent and the application, however, there is no need to remand to the PTO.

[2] Section 102(e) provides: "A person shall be entitled to a patent unless—(e) the invention was described in—(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent . . . ." 35 U.S.C. § 102(e) (2000).

[3] Section 120 provides:

> An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States . . . which is filed by an inventor or inventors named in the previous application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application . . . .

35 U.S.C. § 120 (2000).

[4] In filing an appeal to the Board, an applicant must group the claims according to the arguments to be presented, 37 C.F.R. § 1.192(c)(7) (2002), or argue the patentability of each claim separately. Here, appellants did not separately argue these claims.

[5] Horne made additional references to December 1991: "The spread spectrum code modulation communication technique used in Wang was known long before December 1991 and was simply one available technique for multiple access communications." Horne Decl. ¶ 10 (emphasis added). "The structure of GPS transmissions and the use of GPS as a position-fixing system were known long before December 1991 and were also well-known as of August 1990 when Wang was filed with the U.S. Patent Office." Horne Decl. ¶ 12 (emphasis added). "In December 1991, as represented by Wang and Fukushima, GPS-based positioning systems, ground-based positioning systems, and direct sequence spread spectrum code modulated communication protocols were all known." Horne

Decl. ¶ 14 (emphasis added).

[6] See Graham v. John Deere Co., 383 U.S. 1, 17 (1966) (setting out the central factors relevant to an obviousness inquiry).

[7] Appellants admit that Paul discloses all of the claimed features of the invention in claim 1, with the exception of positional advertising: "The Board's reading of Paul is essentially correct, except for its characterization of Paul as 'prior art.' . . . [T]he parent '093 patent discloses the essential features of Paul discussed by the Board except for the specific broadcast messages." (Appellants' Br. at 41.)

[8] We also find no error in the Board's determination of the level of ordinary skill in the art. Appellants contend that the Board erred by not more precisely identifying the level of ordinary skill in the art, and argue that the Board should have found a person with ordinary skill to be "a golfer, golf professional and/or golf course manager." (Appellants' Br. at 37.) But appellants have not shown how a different, more precise definition of the pertinent art would have changed the result.

[9] The dissent suggests that the majority opinion relies on a combination of references different from the combination relied upon by the Board. That is not correct. We sustain the Board based on its combination of the Wang and Fukushima references together with Dudley. We rely on the Paul reference (cited by the Board itself as the "closest prior art," Huston, slip op. at 22 n.6) for only two purposes, first, to reject appellant's contention that the Board could not properly combine Wang and Fukushima to find the use of GPS on a golf course obvious (since Paul itself demonstrates that very combination as noted by the Board, Huston, slip op. at 22-23), i.e., in rebuttal of an argument by appellant concerning the obviousness of a previously cited combination of reference. Second, we cite Paul as a source of motivation to combine Wang, Fukushima, and Dudley. The Board's cryptic finding of a motivation to combine may be affirmed because it was supported in the record, even though the record reference was not quoted, just as a district court's factual finding may be sustained if supported by record evidence not specifically cited by the district court, see generally Applewood Landscape & Nursery v. Hollingsworth, 884 F.2d 1502 (1st Cir. 1989) (citing a series of cases holding that "[a]s long as such 'brief' and 'pertinent' findings are made and 'the record as a whole supports the district court's findings of fact,' we can affirm its result.").

5863-00100

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte CHARLES D. HUSTON
and
DARRYL J. CORNISH

Appeal No. 2005-2769
Application No. 09/454,813[1]

ON BRIEF

Before FRANKFORT, McQUADE, and NASE, Administrative Patent Judges.

NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection (mailed April 20, 2004) of claims 1, 23 to 32, 34 to 39, 41 to 43, 45 and 47, which are all of the claims pending in this application.

We REVERSE.

[1] Application filed December 3, 1999. According to the appellants, the application is a continuation of Application No. 08/759,081, filed November 27, 1996, now abandoned, which was a continuation of Application No. 08/313,718, filed September 22, 1994, now abandoned, which was a continuation-in-part of Application No. 07/804,368, filed December 10, 1991, now U.S. Patent No. 5,364,093. Application No. 08/759,081 was before this Board in Appeal No. 2000-0925. In addition, Application No. 08/926,293 (a continuation of Application No. 08/366,994, filed December 30, 1994, now abandoned, which was a continuation-in-part of Application No. 08/313,718) was before this Board in Appeal No. 2000-0947. The Board decision in Appeal No. 2000-0947 was reviewed by the Federal Circuit in In re Huston, 308 F.3d 1267, 64 USPQ2d 1801 (Fed. Cir. 2002).

BACKGROUND

The appellants' invention relates to a method and apparatus for determining the approximate distance between a golf ball and a target on a golf course such as a golf cup, and in particular to a method and apparatus utilizing a global positioning satellite receiver to determine the approximate location of a golf ball relative to a target on a golf course (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Bodine et al. (Bodine)	4,666,157	May 19, 1987
Longaker	4,751,512	June 14, 1988
Tattershall	4,783,071	Nov. 8, 1988
Wang et al. (Wang)	5,056,106	Oct. 8, 1991
Bonito et al. (Bonito)	5,095,430	Mar. 10, 1992
Fukushima et al. (Fukushima)	5,270,936	Dec. 14, 1993
Dudley	5,326,095	July 5, 1994
Takahata[2]	JP 03-134715	June 7, 1991

[2] In determining the teachings of Takahata, we will rely on the translation of record.

The following rejections under 35 U.S.C. § 103 are before us in this appeal:

(1) Claims 1, 24, 29, 30, 32, 34, 37, 39, 43 and 47 as being unpatentable over Wang in view of Fukushima and Longaker.

(2) Claims 41, 42 and 45 as being unpatentable over Wang in view of Fukushima and Longaker and further in view of Takahata.

(3) Claims 23, 25, 27, 28, 31, 35, 36 and 38 stand as being unpatentable over Wang in view of Fukushima and Longaker and further in view of Bonito, Bodine and Tattershall.

(4) Claim 26 as being unpatentable over Wang in view of Fukushima and Longaker and further in view of Dudley.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the answers (mailed November 16, 2004 and July 7, 2005) and the supplemental communications (mailed July 14, 2005 and August 11, 2005) for the examiner's complete reasoning in support of the rejections, and to the brief (filed July 12, 2004), reply brief (filed January 19, 2005) and supplemental reply brief (filed July 29, 2005) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

Before turning to the merits of the actual rejections under 35 U.S.C. § 103 before us in this appeal, we believe it is appropriate to resolve one preliminary matter regarding the effective filing date of the claimed subject matter so that we can properly determine if the claims under appeal would have been obvious at the time the invention was made to a person having ordinary skill in the art. We believe that the claimed subject matter under appeal is entitled under 35 U.S.C. § 120 to the filing date of each of the parent applications since those earlier-filed applications do disclose the currently claimed subject matter in the manner provided by the first paragraph of 35 U.S.C. § 112. Accordingly, the claimed subject matter under appeal is entitled to the effective filing date of Application No. 07/804,368 (i.e., December 10, 1991).

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of obviousness is

established by presenting evidence that would have led one of ordinary skill in the art to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) and In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). A critical step in analyzing the patentability of claims pursuant to 35 U.S.C. § 103 is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher." Id. (quoting W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983)).

Most if not all inventions arise from a combination of old elements. See In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). Thus, every element of a claimed invention may often be found in the prior art. See id. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. See id. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some

motivation, suggestion or teaching of the desirability of making the specific combination that was made by the appellants. See In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. In addition, the teaching, motivation or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. See WMS Gaming, Inc. v. International Game Tech., 184 F.3d 1339, 1355, 51 USPQ2d 1385, 1397 (Fed. Cir. 1999). The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981) (and cases cited therein). Whether the examiner relies on an express or an implicit showing, the examiner must provide particular findings related thereto. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. Broad conclusory statements standing alone are not "evidence." Id. When an examiner relies on general knowledge to negate patentability, that knowledge must be

articulated and placed on the record. See In re Lee, 277 F.3d 1338, 1342-45, 61 USPQ2d 1430, 1433-35 (Fed. Cir. 2002).

With this as background, we turn to the rejections under 35 U.S.C. § 103 before us in this appeal.

Rejection (1)

We will not sustain the rejection of claims 1, 24, 29, 30, 32, 34, 37, 39, 43 and 47 under 35 U.S.C. § 103 as being unpatentable over Wang in view of Fukushima and Longaker.

Wang's invention is directed to a method and apparatus which employs a spread-spectrum based radiolocation system, using hand-held receiver units and fixed-position reference transmitters, to determine distance and direction between a golfer and key locations on a golf course, such as the distance and direction to a particular pin. The plurality of timing reference transmitters which are located throughout the vicinity of the golf course broadcast a spread-spectrum ranging signal consisting of a radio-frequency carrier directly modulated by a periodic pseudo-noise (PN) coded or similar sequence. Each transmitter broadcasts at the same RF signal but a unique PN-coded sequence is assigned to each transmitter. Golfers are provided

with the hand-held receiving unit which receives the transmitter spread-spectrum signals and which synchronizes to the spread-spectrum signals in order to obtain range estimates to a selected set of reference transmitters. The hand-held receivers also include memory to store the coordinates of the reference transmitters and the pin positions and other reference points for each hole on the golf course, which are either pre-loaded into memory or transmitted (as modulating data) with the ranging signal. Each hand-held unit also includes a digital processor which incorporates a hyperbolic location algorithm to compute the hand-held unit position based on the estimated ranges to the selected transmitters and the reference transmitter coordinates. The distance and direction from the current position to the pin or other selected reference points is then displayed via an appropriate medium on the hand-held unit.

Fukushima teaches (column 1, lines 45-47) that an object of his invention is "to provide a simplified navigation apparatus which is small in size, low in cost and easy to use." Fukushima's simplified navigation apparatus comprises: a GPS receiver for outputting coordinate data representing the absolute current location of a vehicle; a reading means for reading from a recording medium a plurality of geographical point data groups contained therein, each data group comprising point name data paired with coordinate data; a display means for displaying display information signals supplied thereto; a display point setting means for detecting coordinate data on a given

geographical point from among the plurality of geographical point data groups and setting the coordinate data for the display target point; a reading control means for controlling the reading means so as to retrieve from the recording medium the point name data paired with the coordinate data on the display target point; a computing means for obtaining the data on the distance and direction to the display target point based on the coordinate data both on the current position and on the display target point; and a display control means for supplying the display means with the point name data, distance data and direction data on the display target point as the display information signals. Fukushima further teaches (column 6, lines 46-49) that his simplified navigation apparatus may be mounted not only on passenger cars and trucks but also on bicycles and motorcycles; it may even be carried by a person as a portable navigation apparatus.

Longaker relates to a differential navigation system applicable to mobile users for enhancing the accuracy and precision of navigation. As explained in Longaker at column 1, line 59, through column 2, line 29,

> . . . One common mode of differential operation is where a reference receiver of known location takes note of the difference between its known location and its location predicted by using the navigation service information. This difference reflects errors in the information received. The errors could be deliberate errors introduced into the data for security reasons, atmospheric errors . . . , errors in the knowledge of the actual location of a navigation information service component,

> equipment or clock errors. These errors are key limitations on the level of accuracy and precision achievable with the navigation service. . . .
>
> Navigation information errors detected by a reference receiver will be largely reflected in the navigation information received by all users near the reference station. Communication of some measure of these errors to users in the vicinity of the reference receiver enhances the accuracy with which the users can calculate their location. . . .
>
> When the "coarse" NAVSTAR [GPS] information is utilized in the differential mode it is believed that the level of positioning accuracy will improve from the 100 meter range to the one to five meter range. There are many commercial uses for a low cost, reliable navigation system with an accuracy in the one to five meter range. . . .

In rejecting claims 1, 24, 29, 30, 32, 34, 37, 39, 43 and 47 as being unpatentable over Wang in view of Fukushima and Longaker, the examiner has taken the position (answer, pages 4-5) that it would have been obvious to one of ordinary skill in the art in view of the teachings of the applied references to substitute a GPS position determining system like that of Fukushima, which utilizes signals from space based reference transmitters rather than land based reference transmitters, to determine the position of Wang's receiver units, and in addition to use the differential correction techniques of Longaker to enhance the accuracy and precision of the GPS position information. We do not agree.

It is our opinion that at the time the invention was made (i.e., December 10, 1991) it would have not have been obvious from the teachings of Fukushima to a person having ordinary skill in the art to have substituted a GPS position determining system for the land based reference transmitter system of Wang. We reach this opinion taking fully into account the opinion of the Federal Circuit in In re Huston, 308 F.3d 1267, 64 USPQ2d 1801 wherein the court found the only motivation to combine Wang and Fukushima did not come from the references themselves but from U.S. Patent No. 5,524,081[3] to Paul.[4] However, Paul is not prior art to the claims under appeal in this application. In addition, we note that, at most, the teachings of Fukushima may have suggested that one skilled in the art might have found it obvious to try using a GPS position determining system for the land based reference transmitter system of Wang. But whether a particular combination might be "obvious to try" is not a legitimate test of patentability. See In re O'Farrell, 853 F.2d 894, 903, 7 USPQ2d 1673, 1680-81 (Fed. Cir. 1988); In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1599 (Fed. Cir. 1988); In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir.

[3] Issued June 4, 1996.

[4] We have also weighed the panel's decision in Appeal No. 2000-0925 that it would have been obvious to combine the teachings of Wang, Fukushima and Longaker but such weight is insufficient to carry the day. In our view, that panel's determination (p. 10) that "[t]aken as a whole, the applied prior art references teach that land based positioning systems and differential GPS systems are art recognized alternatives for providing radio positioning information" is without foundation in the record. With such a foundation lacking, there is simply no motivation for an artisan to have modified Wang from the teachings of Fukushima.

1987); In re Merck & Co., Inc ., 800 F.2d 1091, 1097, 231 USPQ 375, 379 (Fed. Cir. 1986); In re Antonie, 559 F.2d 618, 620, 195 USPQ 6, 8 (CCPA 1977).

For the reasons set forth above, the decision of the examiner to reject claims 1, 24, 29, 30, 32, 34, 37, 39, 43 and 47 under 35 U.S.C. § 103 is reversed.

Rejections (2), (3) and (4)

We have also reviewed the references additionally applied in the rejection of claims 23, 25 to 28, 31, 35, 36, 38, 41, 42 and 45 but find nothing therein which makes up for the deficiencies of the applied prior art discussed above with regard to rejection (1). Accordingly, we cannot sustain the examiner's rejection of appealed claims 23, 25 to 28, 31, 35, 36, 38, 41, 42 and 45 under 35 U.S.C. § 103.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 23 to 32, 34 to 39, 41 to 43, 45 and 47 under 35 U.S.C. § 103 is reversed.

REVERSED

CHARLES E. FRANKFORT
Administrative Patent Judge

JOHN P. McQUADE
Administrative Patent Judge

JEFFREY V. NASE
Administrative Patent Judge

) BOARD OF PATENT
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